Rodriguésia 74: e00992022. 2023
http://rodriguesia.jbrj.gov.br
DOI: http://dx.doi.org/10.1590/2175-7860202374051

Original Paper

Sauvagesia (Ochnaceae) in the *campos rupestres* of the Espinhaço Range, Brazil

Adriana Queiroz-Lima[1,5], *André M. Amorim*[2] & *Domingos B. O. S. Cardoso*[3,4,5]

Abstract

The *campos rupestres* (rupestrian grasslands) of the Brazilian Espinhaço Range are renowned for harboring extraordinary plant diversity and endemism, yet many groups representative of this habitat remain taxonomically understudied. *Sauvagesia*, a predominantly neotropical genus of Sauvagesieae (Ochnaceae), is a classic example. In this study, we refine the long-neglected and problematic taxonomy of the Espinhaço-Range-inhabiting species of *Sauvagesia*. Our taxonomic treatment includes 24 species of which seven are derived from recently described taxa or new combinations presented herein. For each of the three new combinations from variety into species status, we also provide new lectotypifications. The studied species are remarkably variable in habit, leaf, and floral architectures, and their distribution is often narrowly restricted to particular mountains across the Espinhaço Range, a pattern especially observed in the highly endemic *S.* subsect. *Vellozianae*. We provide an updated identification key, distribution maps, photographs, and a discussion of diagnostic morphological features.

Key words: endemism, flora, morphology, Ochnaceae, taxonomy.

Resumo

Os campos rupestres da Cadeia do Espinhaço são marcados por possuírem uma extraordinária diversidade vegetal e endemismo, onde grande quantidade de grupos ainda são pouco estudados do ponto de vista taxonômico. É o caso do gênero *Sauvagesia*, predominantemente neotropical, o maior e mais heterogêneo de Sauvagesieae (Ochnaceae). Neste estudo, tentamos desvendar a taxonomia problemática, há muito negligenciada, das espécies de *Sauvagesia* no Espinhaço. Nosso tratamento taxonômico registrou 24 espécies, das quais sete provêm de táxons recentemente descritos ou novas combinações aqui apresentadas. Para cada uma das três novas combinações de status de variedade em espécie, nós também fornecemos novas lectotipificações. As espécies estudadas são notavelmente variáveis no hábito, folhas e arquitetura floral e sua distribuição é restrita a algumas montanhas do Espinhaço, um padrão observado especialmente na endêmica *S.* subseção *Vellozianae*. Nós fornecemos uma chave de identificação atualizada, mapas de distribuição, fotos e uma discussão de características morfológicas diagnósticas.

Palavras-chave: endemismo, flora, morfologia, Ochnaceae, taxonomia.

Introduction

The ca. 1,000 km long S-shaped Espinhaço Range occupies an area of ca. 120,000 km^2 in the center of Minas Gerais and Bahia states and is well known for the high rates of endemism of its species-rich and unique flora (Harley 1995; Giulietti *et al.* 1997; Rapini *et al.* 2008). Whereas the northern Espinhaço Range is nested in the

[1] Universidade Estadual de Feira de Santana, Prog. Pós-graduação em Botânica, Novo Horizonte, Feira de Santana, BA, Brazil. ORCID: <https://orcid.org/0000-0002-7347-6072>.

[2] Universidade Estadual de Santa Cruz, Depto. Ciências Biológicas, Ilhéus, BA, Brazil. ORCID: <https://orcid.org/0000-0003-0712-3321>.

[3] Universidade Federal da Bahia, Instituto de Biologia, Prog. Pós-graduação em Biodiversidade e Evolução, Ondina, Salvador, BA, Brazil. ORCID: <https://orcid.org/0000-0001-7072-2656>.

[4] Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Jardim Botânico, Rio de Janeiro, RJ, Brazil.

[5] Author for correspondence: adrianaqueirozlima@gmail.com; cardosobot@gmail.com

Caatinga seasonally dry woodland, the southern part lies between two South American biodiversity hotspots (Myers *et al.* 2000): the Atlantic tropical rain forest to the east and the Cerrado (savanna vegetation) to the west. Most of the remarkably scenic landscape of the Espinhaço Range is, however, covered by the *campo rupestre*, a savanna-like vegetation closely associated with quartzite and ironstone outcrops on mountain tops at altitudes above 900 m a.s.l. isolated by vallies and major depressions (Silveira *et al.* 2015). Soil conditions, temperature and wind variation, water stress, and fire regimes have favored the convergent evolution of scleromorphic and ericoid plants in different angiosperm families (Giulietti *et al.* 1997; Silveira *et al.* 2015).

Although the Espinhaço Range represents less than 1.5% of the Brazilian territory, it harbors ca. 10% of the entire flowering plant species reported for the country (Ribeiro *et al.* 2012), of which 30% are endemic to the *campos rupestres* (Giulietti *et al.* 1987). Endemism is concentrated in particular plant families, such as Asteraceae, Eriocaulaceae, Melastomataceae, and Velloziaceae. However, other taxonomically neglected families such as Ochnaceae have begun to catch the attention by the speed at which new species have been discovered over the last decade especially in the genus *Sauvagesia* L.: the focus of this treatment.

Sauvagesia has a pantropical distribution and ca. 50 species, and it is the largest and morphologically most heterogeneous genus in Sauvagesieae (Schneider *et al.* 2014) with a complex taxonomic history. Recently, Schneider *et al.* (2021a,b) shed light on the phylogenetic understanding of Ochnaceae based on nuclear and plastid phylogenomic analyses, respectively. In addition to unraveling the internal relationships within Ochnaceae, these studies showed with maximum support the non-monophyletic nature of *Sauvagesia*. Strikingly, Sastre's (1981) subsect. *Vellozianae* appeared as a separate lineage with respect to the remaining *Sauvagesia* species. Interestingly, most species of subsect. *Vellozianae* are geographically localized, being mostly endemic to the *campos rupestres* vegetation in the ridges of the mountains across the Espinhaço Range in the Brazilian states of Minas Gerais and Bahia. A future revision of the entire *Sauvagesia* s.l. in a molecular phylogenetic context including a more comprehensive sampling would help to clarify the generic delimitation in the group.

In Brazil, *Sauvagesia* comprises 36 species, ca. 80% of these species occur in the *campos rupestres* and *cerrado* vegetation (Cardoso *et al.* 2022). The significant diversity and endemism of *Sauvagesia* in such formations is evidenced by the numerous new species that have already been described from Bahia and Minas Gerais only in the last decade (Cardoso & Conceição 2008; Cardoso 2011; Cardoso & Harley 2015; Harley *et al.* 2005; Queiroz-Lima *et al.* 2017a,b, 2018; Zappi & Lucas 2002). Such recent discoveries clearly reinforce the need for a thorough floristic and taxonomic assessment of the genus involving a review of herbarium collections and extensive fieldwork, especially in the poorly-known *campos rupestres* areas that still remain understudied throughout the Espinhaço Range.

Material and Methods

The taxonomic treatment involves diagnostic morphological descriptions, an updated identification key, and comments on flowering phenology, geographical distribution, and diagnostic features which help to differentiate morphologically similar species. We reviewed the following herbaria known to archive important collections for the flora of the *campos rupestres* of the Espinhaço Range (acronyms are according to Thiers, continuously updated): Brazilian herbaria (ALCB, BHCB, BHZB, CEN, CEPEC, CTES, DIAM, ESA, FURB, HRB, HUEFS, HUFSJ, MBML, SP, SPF, UB, UEC, UFG, and UNB), and foreign herbaria (BR, F, FI, G-DC, K, MO, NHN, NY, P, and W).

The terminology for the morphological descriptions is based primarily on Radford *et al.* (1976) and Stearn (1992), while the other vegetative and reproductive structures follow Rizzini (1977), Weberling (1992), Harris & Harris (1994). Whenever specific terminologies are used on *Sauvagesia* morphology, these were based primarily on Sastre (1970, 1971a,b, 1973, 1978, 1981) and Harley *et al.* (2005). We also carried out extensive field expeditions to remote and underexplored areas in the Espinhaço Range, some of which were known to inhabit poorly collected taxa or promising sites to discover new species or to reveal new records. Photographs were taken for most species, and we followed the usual recommendations of drying and collecting plant specimens (Mori 2011) prior to being incorporated into the HUEFS herbarium. Duplicate specimens were also shared among different herbaria.

Leaves and flowers obtained during our fieldwork were fixed in 70% alcohol to enable an accurate examination of the specimens for description and illustration. In addition, silica-gel dried leaf samples were separated for future molecular phylogenetic investigation.

Results and Discussion

The phylogenetic uncertainties of *Sauvagesia* is evident from even its original description by Linnaeus (1753). Subsequently, *Sauvagesia* had been positioned in the families Violarieae (Gingins 1824), Frankeniaceae (Saint-Hilaire 1824b) or Droseraceae (Martius & Zuccharini 1824). Planchon (1847) was the first to place *Sauvagesia* in the Ochnaceae. Then, Baillon (1873) classified *Sauvagesia* in a tribe belonging to the Violaceae, although he clearly related this family with Ochnaceae. The new family Sauvagesiaceae was suggested by Bartling (1830) and later accepted by Endlicher (1839), Grisebach (1864), and van Tieghem (1904). Such studies had linked Sauvagesiaceae with Guttiferae, Frankeniaceae, and Hypericaceae, whereas Eichler (1871) positioned it again near Violaceae. Engler (1874) then replaced *Sauvagesia* in Ochnaceae as a subtribe of Luxemburgieae Horan. Later, Ochnaceae *s.str.* was divided into two subfamilies Ochnoideae and Sauvagesioideae (Amaral 1991), a classification system that corresponds basically to Engler's (1874) long-adopted concepts of "Exalbuminosae" and "Albuminosae" (Gilg 1895; Kanis 1968; Sastre 1973, 1987).

Currently, phylogenetic analyses of molecular data have left no doubt that *Sauvagesia* is a member of the Ochnaceae (Schneider *et al.* 2014, 2021a,b), where it appears as most closely related to the genera *Luxemburgia* A.St.-Hil., *Philacra* Dwyer, and *Testulea* Pellegr.

An infrageneric classification for *Sauvagesia* was initially suggested by Sastre (1978), who divided the genus into two sections: *Sauvagesia* and *Imthurnianae* Dwyer. Next, Sastre (1981) indicated two subsections within the Brazilian species of sect. *Sauvagesia*: subsect. *Sauvagesia*, characterized by having free internal staminodes, and the subsect. *Vellozianae* Sastre, characterized by fused, corona-like internal staminodes that envelope the fertile, reproductive organs. Within subsect. *Sauvagesia*, the inner whorl is often accompanied by a morphologically variable free outer whorl (Harley *et al.* 2005), while the subsect. *Vellozianae* almost always lacks external staminodes.

Sauvagesia L., Sp. Pl. ed. 1: 203. 1753. TYPE: *Sauvagesia erecta* L.

Herbs, subshrubs or shrubs, rarely small trees, usually ericoid, the leaves clustered towards the branch apices and shedding below. Stipules intrapetiolate or arranged in tufts, entire or few to much long fimbriate, sometimes becoming setulose, the lamina clearly expanded or reduced to a filament, fimbriae glandular or eglandular, delicate to stiff, usually caducous at the base of the branches. Leaves alternate, spirally arranged or densely clustered on short fascicles, ovate, elliptic, lanceolate or reduced to acicular lamina, glabrous, petiolate, subsessile or sessile, venation craspedodromous, secondary veins parallel, margin crenate or serrate, commonly glandular, marginal vein distinct. Inflorescence terminal or exceptionally reduced to one axillary flower, pyramidal to subcylindrical panicle, raceme, scorpioid cyme (bostryx), compound (umbel-like) dichasium; bracts stipule-like or foliaceous, glabrous. Flowers actinomorphic, pentamerous; sepals free, imbricate, persistent after fruit development, glabrous, glossy, margin entire or with some fimbriae or glands; petals free, contorted in bud, opening widely and star-like or slightly imbricate and campanulate-like in shape, white to deep pink, glabrous; external staminodes absent or 5–30, arranged in 1 or 2 series, filamentous; internal staminodes 5, petaloid, free or fused into a corona-like structure enveloping the stamens, the midvein of each staminode distinct; stamens 5, alternipetalous, subsessile, borne on short, thick, glabrous filaments, anthers introrse, bithecal, rimose, single- or bi-apiculate, usually persistent after fruit development; gynoecium with ovary tricarpelar, unilocular, inconspicuously trilobed, placentation parietal or rarely basal (*S. linearifolia* A.St.-Hil.), the style subulate, cylindrical, often projecting by 0.5–2.5 mm beyond the apex of the internal staminodes, stigma simple, inconspicuous. Fruit a septicidal capsule, greenish to green-vinaceous when immature, glabrous, usually ovoid, apex strongly caudate, the valves subcoriaceous, dehiscing from the apex to more than half of the fruit size. Seeds small, up to ca. 1.5 mm long, dark brown, glabrous, laterally compressed, densely muricate.

The pantropically-distributed genus *Sauvagesia* is represented by endemic species in China (one sp.), Malaysia (two spp.), and Africa (one sp.), however its species diversity is greatly concentrated in the Neotropics, mainly in Brazil,

where 36 species have been recorded thus far (Amaral & Bittrich 2014; Cardoso *et al.* 2020). *Sauvagesia* species inhabit the understory of tropical rain forests or drier environments such as savannas and *campos rupestres* (rupestrian grasslands). The remarkable diversity of the genus in the scenic mountain tops of the Espinhaço Range (Figs. 1-3), which is home to more than half of the species known in the genus, is perhaps another example of species radiation in the evolutionary theater of the *campos rupestres* (Ribeiro *et al.* 2012; Bitencourt & Rapini 2013; Conceição *et al.* 2016; Alcântara *et al.* 2018; Vasconcelos *et al.* 2020; Rapini *et al.* 2021).

Key to species of *Sauvagesia* in the Espinhaço Range

1. Leaf blade reduced (< 1 mm wide) or acicular 2
1'. Leaf blade expanded (≥ 1 mm wide), rarely linear but never terete or acicular 8
2. Leaves tiny, < 1 mm long, densely clustered in rosette-like fascicles; geographically concentrated in the *campos rupestres* of the southern Espinhaço Range (Minas Gerais) 3
2'. Leaves > 1 cm long, spirally arranged and acicular; occurring in the *campos rupestres* of the northern Espinhaço Range (Chapada Diamantina of Bahia) 5
3. Multi-stemmed shrubs, densely branched from the base, the branches ≥ 4 mm thick; stalked glands present at leaf margins and bracts along inflorescences; galls commonly present along the branches ..... 23. *Sauvagesia spicata*
3'. Mostly single-stemmed or poorly branched shrubs, the branches < 4 mm thick; leaf glands absent; galls absent or very rare along the branches 4
4. Inflorescence a congested bostryx, petals pale pink or white, widely open reflexed ..... 5. *Sauvagesia elegantissima*
4'. Inflorescence a lax raceme, petals reddish pink, widely open, star-like ..... 2. *Sauvagesia bryoclada*
5. Leaves (1.8)2–2.6 cm long; inflorescence paniculate; flowers with white petals ..... 17. *Sauvagesia paniculata*
5'. Leaves < 2 cm long; inflorescence umbel-like; flowers with pink petals 6
6. Leaves slightly crenulate, bearing 3–5 pairs of glands at the margin ..... 19. *Sauvagesia ribeiroi*
6'. Leaves with entire margin, marginal glands absent 7
7. Leaves 3–4 mm long; flowers with glandular sepals and campanulate-like corolla, the petals 6–7 mm long ..... 15. *Sauvagesia oliveirae*
7'. Leaves 7–20 mm long; flowers with eglandular sepals and widely open corolla, the petals 7–13 mm long ..... 21. *Sauvagesia semicylindrifolia*
8. Flowers with numerous, free, filamentous staminodes external to a corona-like whorl of five, free, strongly imbricate petaloid staminodes 9
8'. Flowers lacking external staminodes and with a corona-like, fused internal staminodal whorl 11
9. Leaves coriaceous; flowers on terminal racemes ..... 18. *Sauvagesia racemose*
9'. Leaves membranaceous to subcoriaceus; flowers solitary or in ca. 3-flowered inflorescences 10
10. Leaf lamina 0.5–1 mm wide, elliptic 6:1, sinus in 3–6 pairs and bearing an inconspicuous gland ..... 13. *Sauvagesia linearifolia*
10'. Leaf lamina 0.2–1.2 cm wide, lanceolate 3:1, sinus in 9–16 pairs and bearing a conspicuous gland ..... 6. *Sauvagesia erecta*

11. Inflorescence umbel-like 12
11'. Inflorescence paniculate 14
12. Inflorescence pedunculate; shrub commonly reaching 80 cm tall ..... 12. *Sauvagesia lagevianae*
12'. Inflorescence sessile; subshrub < 40 cm tall 13
13. Leaf margin entire and revolute; flowers with pinkish petals ..... 7. *Sauvagesia ericoides*
13'. Leaf margin bearing long bristles at distal ends; flowers with white petals ..... 22. *Sauvagesia setulose*
14. Panicles compact, subcylindrical, the flowers borne on congested lateral racemose shoots 15
14'. Panicles lax, more or less pyramidal, the flowers borne on relatively long lateral racemose shoots 18
15. Petals deep-pink; sepals with stalked glands ..... 20. *Sauvagesia rubra*
15'. Petals white to pale-pink; sepals with conical glands 16
16. Leaves with obtuse apex; glands at the sepal margin or just one at the apex; endemic to the Chapada Diamantina in Bahia ..... 14. *Sauvagesia nitida*
16'. Leaves with mucronate apex; glands always at the sepal margin; occurring in the Serra do Espinhaço in Minas Gerais 17
17. Leaf mucron ca. 5 mm long, leaf lamina 1.6–4 × 0.8–2.1 cm; corona-like staminodal whorl white with the base pink ..... 8. *Sauvagesia glandulosa*
17'. Leaf mucron ca. 1 mm long, leaf lamina 0.9–1.6 × 0.5–1.2 cm; corona-like staminodal whorl deep-pink ..... 4. *Sauvagesia congesta*
18. Leaf lamina < 5 mm long, margin entire and revolute, eglandular ..... 1. *Sauvagesia alpestris*
18'. Leaf lamina ≥ 5 mm long, margin crenulate, bearing a conical gland at the base of each sinus 19
19. Leaves verticillate 20
19'. Leaves spirally arranged 21
20. Branches densely covered by glandular laminar, often fimbriate indument, leaf lamina 6–13 × 2–5 mm ..... 9. *Sauvagesia glanduloso-pubescens*
20'. Branches glabrous, leaf lamina 5–23 × 2–8 mm ..... 3. *Sauvagesia capillaris*
21. Leaves not imbricate, commonly vinaceous; plants inhabiting preferentially in forest understory ..... 24. *Sauvagesia vellozii*
21'. Leaves strongly imbricate; plants inhabiting open areas of *campos rupestres* vegetation 22
22. Leaves 1.6–2 × 0.8–1 cm, with rusty pear-like colleters at the petiole base ..... 10. *Sauvagesia insignis*
22'. Leaves less than 1.6 × 0.7 cm, without petiolar pear-like colleters 23
23. Leaves 0.4–1.4 cm long, few-branched; inflorescences with a bloom of less than 20 flowers ..... 11. *Sauvagesia insolita*
23'. Leaves 1–1.6 cm long, multi-stemmed subshrubs that are densely branched from base; inflorescences with a bloom of ca. 70 flowers ..... 16. *Sauvagesia paganuccii*

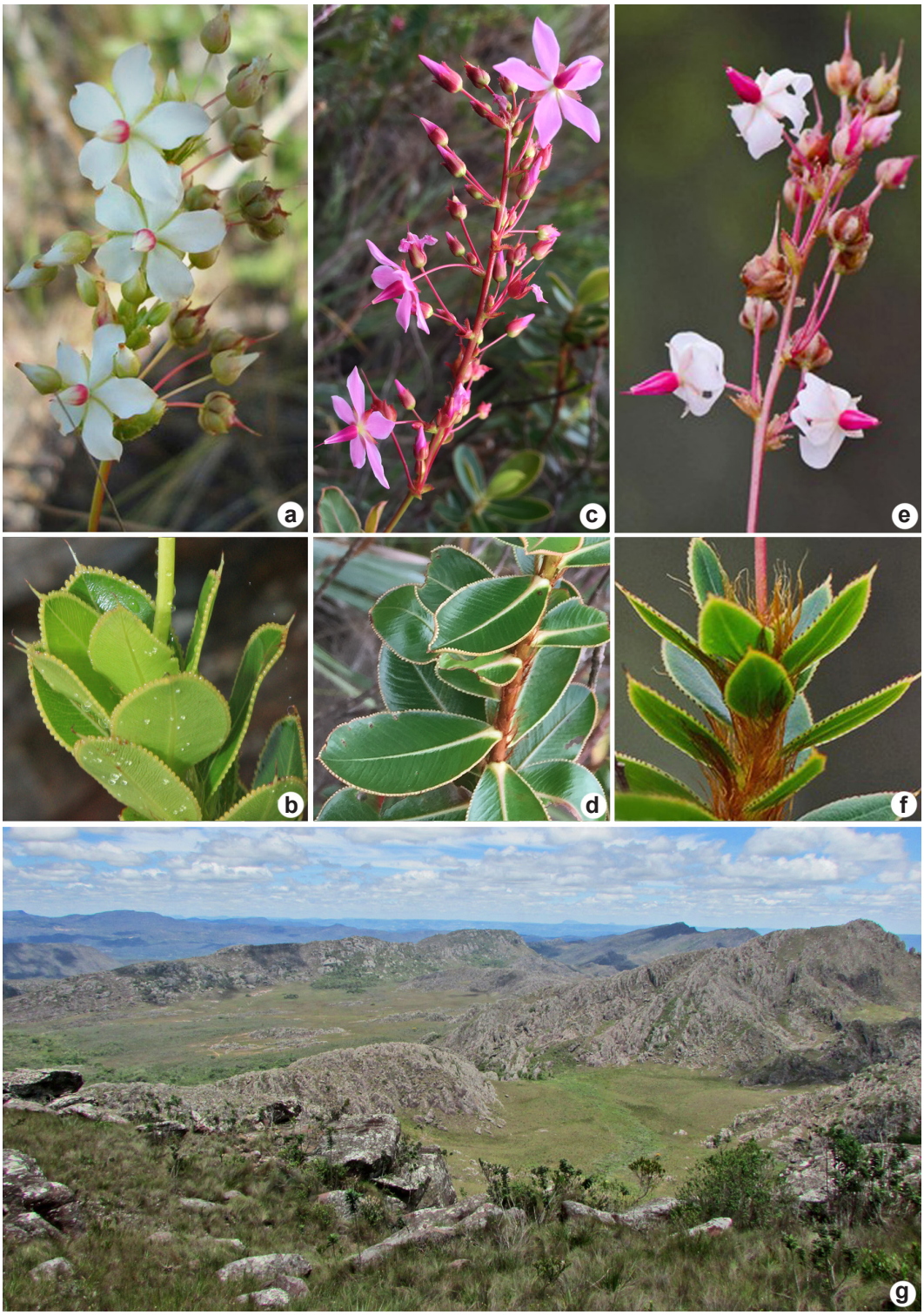

Figure 1 – *Sauvagesia* in the Brazilian Espinhaço Range – a-b. *Sauvagesia glandulosa* – a. inflorescence; b. leaves; c-d. *Sauvagesia rubra* – c. inflorescence; d. leaves; e-f. *Sauvagesia congesta* – e. inflorescence; f. leaves; g. *Campo rupestre* vegetation from the top of Pico das Almas in the Chapada Diamantina of Bahia. (a. *M. Sobral 13081*; b. *D. Cardoso 2741*; c-d. *D. Cardoso 4098*; e-f. *F.D. Gontijo 714*). Photos: a. M. Sobral; b-d. D.B.O.S. Cardoso; e-f. F.D. Gontijo; g. A. Queiroz-Lima.

1. *Sauvagesia alpestris* (Mart.) Zappi & E.Lucas, Kew Bull. 57(3): 714. 2002. Fig. 2d

Subshrub up to 40 cm tall, slender, cylindrical, ericoid, the leaves shedding at the base of the branchlets. Flowers in this species open widely and have pale pink petals, while the corona-like internal staminodal whorl is pink, becoming white in the apex. *Sauvagesia alpestris* is vegetatively very similar to *S. ericoides* and for a long time they were treated as a single species (*e.g.*, Sastre 1971a, 1981). Both species occur sympatrically in the *campos rupestres* of Serra do Caraça in Minas Gerais, however, the type of inflorescence in these species is of great importance to differentiate between them. We agree with Eichler (1871) and Zappi & Lucas (2002) who have considered *S. alpestris* as distinct species. The inflorescence in *S. alpestris* is a pedunculate lax panicle and the sepals ovate 2:1, while *S. ericoides* bears flowers on a terminal sessile fascicle and sepals lanceolate 3:1. **Representative specimens examined**: 1820, fl. and fr., *M. Stevens 7969* (G); 1840, fl., *P. Claussen 360* (NY, BR); 1840, fl., *P. Claussen 418* (K); 1841, fl., *P. Claussen 50* (NY); 1842-43, fr., *P. Claussen 186* (K); 1894, fl., *A.F.M. Glaziou 20192* (K). Catas Altas, "*Serra de Carassa*", *dicto versus Inficionado*, 1824, fl. and fr., *C.F.P. von Martius* (M no. 0036206); RPPN Santuário do Caraça, 20°04'29S, 43°24'27"W, 9.X.2000, fl., *J. Ordones et al. 426* (BHZB); Serra do Caraça, 9.X.2000, fl., *R.C. Mota 993* (BHCB); 1904, fl., *C.A.W. Schwacke* (BHCB no. 1250); 1842, fl. and fr., *P. Claussen* (W no. 18890152732); *C.F.P. von Martius* (type collection: M).

Sauvagesia alpestris is currently known by only a few collections from the Santuário do Caraça Natural Heritage Private Reserve (RPPN in Portuguese) in Minas Gerais. It occupies the *campo rupestre* on the sandstone summit at ca. 1,400 m a.s.l. It has been found flowering from April to August, and fruiting from October to December.

2. *Sauvagesia bryoclada* Queiroz-Lima & D.B.O.S. Cardoso, Syst. Bot. 43(1): 222. 2018.

Shrub up to 1.7 m tall, erect, single-stemmed, branched mainly towards the apex, the branches 2–4 mm thick, slender, cylindrical; leaves and stipules densely grouped on rosette-like short fascicules, the whole plant body looks like it was entirely colonized by mosses; fruit-like galls scattered along the branches. Flowers in this species open widely and have intense pink petals turning white proximally and distally, while the corona-like internal staminodal whorl is pink, becoming white in the apex.

Representative specimens examined: Botumirim, Campina do Bananal, 16°50'23"S, 43°03'04"W, 1,327 m a.s.l., 7.I.2016, fl. and fr., *A.M. Amorim et al. 10235* (CEPEC, HUEFS, HUESC, MBM, P, RB, SPF); campo rupestre aberto na Campina do Bananal, 16°50'23"S, 43°03'04"W, 1,327 m a.s.l., 7.I.2016, fl. and fr., *D. Cardoso et al. 3880* (ALCB, HUEFS, RB); Campina do Bananal, 16°50'23"S, 43°03'04"W, 1,327 m a.s.l., 7.I.2016, fl. and fr., *A. Queiroz-Lima et al. 170* (type collection: ALCB, BHCB, CEPEC, DIAM, F, HUEFS, K, MBM, MO, NY, P, RB, SPF); Serra da Canastra, caminho de Botumirim para Barra do Veado, 1,000-2,000 m a.s.l., 23.VII.1985, fl. and fr., *G. Martinelli et al. 11288* (BHCB, RB); Campina do Bananal, 1,320 m a.s.l., 1.III.2000, fl., *M.F. Vasconcelos & S. D'Angelo Neto* (BHCB 50871). Grão Mogol, 1,100 m a.s.l., 12.XI.1938, fr., *Markgraf 3487* (P, RB).

Sauvagesia bryoclada can be differentiated from *S. elegantissima* and *S. spicata* by its single-stemmed shrubby habit densely branched towards the apex (*vs*. poorly-branched, single-stemmed shrub in *S. elegantissima* and multi-stemmed shrub densely branched from the base in *S. spicata*), absence of glands in the leaf and sepal margins (*vs*. glands rare in *S. elegantissima* and often present in the sepals and leaves of branch apices in *S. spicata*), inflorescence a lax, 20–50-flowered, 1.2–3.8 cm long bostryx (*vs*. congested, 10–20-flowered, 1.3–2.2 cm long bostryx in *S. elegantissima*), pedicel 5−10 mm long (*vs*. 3–6 mm long in *S. elegantissima*), reddish-pink and widely open petals resulting in a star-like flower shape (*vs*. non-star-like flowers with pale-pink, strongly reflexed petals in *S. elegantissima* and star-like flowers with white petals in *S. spicata*).

Sauvagesia bryoclada has restricted distribution in the *campo rupestre* of the municipalities of Botumirim and Grão Mogol in Minas Gerais state, Brazil. It grows directly on rocks or in damp sandy soil at 1,000−1,300 m a.s.l. Flowering specimens have been collected from March to November and fruit specimens from July to November.

3. *Sauvagesia capillaris* (A.St.-Hil.) Sastre, Sellowia 23: 13. 1971. Fig. 2a-b

Shrub up to 1 m tall, branched, the branches, cylindrical, glabrous; leaves with different sizes in the same branch. Flowers in this species have revolute pale pink petals, while the corona-like internal staminodal whorl is pink, becoming white proximally and distally. *Sauvagesia capillaris* is morphologically very similar to *S. glandulosopubescens*. Indeed, both species were considered as a single species thus far (Saint-Hilaire 1823).

Figure 2 – *Sauvagesia* in the Brazilian Espinhaço Range – a-b. *Sauvagesia capillaris* – a. inflorescence; b. leaves; c. *Sauvagesia glanduloso-pubescens*; d. *Sauvagesia alpestris*; e. *Sauvagesia ericoides*; f. *Sauvagesia nitida*; g. *Sauvagesia insignis*; h. *Sauvagesia vellozii*; i. *Sauvagesia linearifolia*. (a-b. *D. Cardoso 4116*; c. *P.L. Viana 2857*; d. unvouchered; e. *D. Cardoso 4113*; f. *A.A. Conceição 1815*; g. *T. Araújo 290*; h. *L.G. Pedrosa 1485*; i. *D. Cardoso 2633*). Photos: a-b, e, i. D.B.O.S. Cardoso; c. A. Queiroz-Lima; d. O. Ribeiro; f. A.A. Conceição; g. T. Araújo; h. L. Pedrosa.

Although they share a similar habit, *S. capillaris* readily differs from *S. glanduloso-pubescens* by the glabrous branches (*vs.* fimbriate-laminar glandular branches in *S. glanduloso-pubescens*), stipules with ca. 10 fimbriae (*vs.* ca. 3), and a relatively smaller, 1.8–4 cm long inflorescence (*vs.* 3.5–9 cm long).

Representative specimens examined: Catas Altas, RPPN Santuário Serra do Caraça, trilha da Lapinha-Gruta de Lourdes-Pico da Carapuça, 20°05'33''S, 43°28'22''W, 1,602 m a.s.l., 25.V.2016, fl. and fr., *D. Cardoso et al. 4116* (ALCB, HUEFS); RPPN Santuários do Caraça, trilha para Gruta de Fátima, 20°05'39''S, 43°28'38''W, 1,430 m a.s.l., 26.IV.2010, fl. and fr., *L.L. Giacomin et al. 1141* (RB); Serra do Caraça, 15.XI.2004, fl., *R.C. Mota 2678* (BHCB); Serra do Caraça, próximo Gruta da Bocaina, 5.I.2005, fl., *R.C. Mota 2647* (BHCB). Ouro Preto, Cachoeira das Andorinhas, 15.VII.1978, fl. and fr., *G. Martinnelli 4715* (RB). Itacolomy, 1904, fl., *C.A.W. Schwacke 7457* (BHCB). Camarinhas, 1,350-1,400 m a.s.l., 6.VIII.1980, fr., *H.C. de Lima et al. 1339* (RB); Serra das Camarinhas, 1,350 m a.s.l., 24.V.1979, fl. and fr., *L. Mautone et al. 787* (RB). Santa Bárbara, Parque Natural do Caraça, 20°60'S, 43°28'W, 1,500 m a.s.l., 16.I.1994, fl., *C.M. Sakuragui CFCR13873* (BHCB, K); Serra da Caraça, trilha para Capelinha-Gruta de Lourdes-Beiço do Diabo, 7.III.1982, fl. and fr., *N. Hensold et al. CFCR2911* (HUEFS); Serra do Caraça em direção à Carapuça, 1,500 m a.s.l., 18.XI.1977, fl., *N.D. Cruz et al. UEC no. 6448* (RB); Serra do Caraça, 17.XII.1982, fl. and fr., *J.R. Pirani et al. 330* (HUEFS); Serra do Caraça, 22.III.1957, fl. and fr., *E. Pereira 2580 & Pabst 3416* (RB); Serra do Espinhaço, Serra do Caraça, 25.I.1971, fr., *H.S. Irwin et al. 29109* (MO, NY). Serro, Serra de Itambé, 1817, *A. St. Hilaire B1830* (type collection: K, MPU, P).

Sauvagesia capillaris occurs only in Minas Gerais state (Fig. 3c), where it dwells in sandstone *campo rupestre*, between cracks and depressions, and steep valleys in more humid shady areas, where streams are usually common. It occurs at 1,300–1,700 m a.s.l. It has been recorded flowering and fruiting all over the year.

4. *Sauvagesia congesta* (Eichl.) Queiroz-Lima & D.B.O.S. Cardoso, comb. nov. et stat. nov.

Lavradia glandulosa A.St.-Hil. var. *congesta* Eichl. in C.F.P. von Martius & A.W. Eichler, *Fl. brasil.* 13(1): 415. 1871.

TYPE: BRAZIL. Minas Gerais: "in campis humidisque Serra Itabira do campo", without date, *Lund s.n.* (lectotype, here designated: NY no. NY00888225). Fig. 1e-f

Shrub 20–90 cm tall with erect, slender, cylindrical, and glabrous branches without leaves at the base. Flowers have revolute white petals, while the corona-like internal staminodal whorl is pink, becoming white in the apex. It has been historically related and confounded to the herein called glandular species complex (*S. glandulosa* and *S. rubra*), but it is readily distinguished by the combination of elliptic 2:1 leaves measuring 0.9–1.6 × 0.5–1.2 cm (*vs.* leaves 1.6–4 × 0.8–2.1 cm and obovate, in *S. glandulosa* and 2–6 × 1–2.5 cm and obovate in *S. rubra*), sepals with transparent, conical, sessile glands along the margin (*vs.* sepals with stalked glands in *S. rubra*), petals 4–7 × 2.5–3 mm and pale pink to white (*vs.* petals 6–8 × 3–4 mm and white in *S. glandulosa* and 9–10 × 3–4 mm and deep-pink in *S. rubra*).

Representative specimens examined: Belo Horizonte, Serra do Curral, 11.XI.1955, fl., *L. Roth 16550* (UFJF). Caeté, 40°41'01''S, 20°01'20''W, 1,471 m a.s.l., 6.V.2015, fl. and fr., *F.D. Gontijo & I.F. Braga 714* (BHCB). Itabirito, Pico do Itabirito, 24.IX.1993, fl. and fr., *K. Yamamoto 7 & M.C.E. Amaral 95* (BHCB). Nova Lima, Mina Capitão do Mato, 20°05'58''S, 43°54'05''W, 1,313 m a.s.l., 9.IV.2013, fl. and fr., *E. Miranda et al. 1169* (BHCB); Morro do Chapéu, 25.XII.1980, fl. and fr., *T.S.M. Grandi 524* (BHCB); Morro do Chapéu, 27.XII.1982, fr., *T.S.M. Grandi & P.M. Andrade 1195* (BHCB). São Tomé das Letras, 19.XII.1971, fl., *L. Monteiro de S. 8332* (NY). Santa Luzia, Serra do Cipó, km 115, 25.XI.1938, fl., *Mello-Barreto 8568* (BHCB). Santana do Riacho, Serra do Cipó, km 105, 8.V.1987, fl. and fr., *R. Simão CFSC 10102* (P).

Sauvagesia congesta also appears morphologically akin to *S. lagevianae*, but it differs on its elliptic leaves with acute apex, slightly serrate margin, and inconspicuous secondary veins (*vs.* leaves obovate with obtuse apex, sharply serrate margin, and distinct secondary veins), as well as the subcylindrical panicles (*vs.* umbellate inflorescences borne above a distinct peduncle on terminal branches) with flowers star-like in shape, the petals opening widely and reflexed (*vs.* campanulate-like flowers).

In the original description of *Lavradia glandulosa* var. *congesta* Eichl., three syntype specimens were cited: *Saint-Hilaire s.n.*, *Riedel s.n.* (Serra São José prope São João d'El Rey), and *Lund s.n.* (Serra Itabira do campo). One hundred years later, Sastre (1971a) synonymized this variety under a broad concept of *Lavradia glandulosa* A.St.-Hil., yet he erroneously assigned the same type collection as that of *Lavradia glandulosa* var. *rubra* A.St.-Hil. We were able to locate only Lund's duplicate specimen that is deposited at NY herbarium (no. NY00888225) and thus have we have chosen it for the lectotype.

Sauvagesia congesta occurs in central to southern Minas Gerais state (Fig. 3d), on supergenic concretions of iron oxide and ferruginous concretions (*campo cerrado ferruginoso* locally known as *canga*), sandy soil between quartzite outcrops (*campo rupestre*) and sandy slopes, at 1,150–1,600 m a.s.l. It has been found flowering and fruiting all over the year.

5. *Sauvagesia elegantissima* A.St.-Hil., Mem. Mus. Paris 9: 325. 1822.

Shrub 1–1.5 m tall, erect, branched only toward the apex, the branches 2.5–4 mm thick, slender, cylindrical, covered with densely-grouped leaves and stipules in rosette-like short fascicles. Flowers in this species have revolute pale pink petals, while the corona-like internal staminodal whorl is pink, becoming white in the apex. *Sauvagesia elegantissima* is morphologically related to *S. bryoclada* and *S. spicata*. The taxonomic distinction of *S. elegantissima* is presented in the discussion of the other species.

Representative specimens examined: Buenópolis, Campos São Domingos, estrada para Curimataí, 17°54'51''S, 43°48'05''W, 1,309 m a.s.l., 28.XI.2014, fl. and fr., *N. Roque et al. 4607* (ALCB); Serra de Curumatahy, IX.1817, fl. and fr., *A. Saint-Hilaire B1-2001* (type collection: K, MPU, P). Diamantina, Parque Nacional das Sempre-Vivas, estrada para o alojamento, 17°57'32"S, 43°47'3''W, 1,232 m a.s.l., 9.I.2016, fl. and fr., *A. Queiroz-Lima et al. 175* (ALCB, BHCB, CEPEC, DIAM, F, HUEFS, K, MBM, MO, NY, P, RB, SPF); Parque Nacional das Sempre-Vivas, estrada para o alojamento, 17°57'32"S, 43°47'03''W, 1,232 m a.s.l., 9.I.2016, fl. and fr., *A.M. Amorim et al. 10257* (CEPEC, HUEFS, NY, P, RB, SPF); Parque Nacional das Sempre-Vivas, campo rupestre aberto e graminóide em solo arenoso, na estrada para o alojamento, 17°57'32"S, 43°47'03''W, 1,232 m a.s.l., 9.I.2016, fl. and fr., *D. Cardoso et al. 3915* (ALCB, HUEFS, RB).

Sauvagesia elegantissima is narrowly distributed in the *campo rupestre* vegetation of the municipalities of Buenópolis and Diamantina in Minas Gerais state, Brazil, where it occurs in cracks between rocks at 1,200−1,300 m a.s.l. Flowering and fruiting individuals were observed from November to January.

6. *Sauvagesia erecta* L., Sp. Pl. 1: 203. 1753.

Herb to subshrub 0.1–1 m tall, well branched, green to vinaceous, cylindrical. Flowers have flat or revolute white petals, with numerous free pink external staminodes around and internal whorl of five free pink petaloid staminodes, becoming greenish-white in the apex. The morphology of *S. erecta* is widely variable, probably as a result of its pantropical distribution, occupying many different environments, from the understory of tropical rain forests to the drier mountain tops of the Espinhaço Range. As such, the distribution of its leaves along the branches can be well spread or very close, sometimes becoming verticillate. Leaf size is also highly variable, as well as the habit. For example, we have seen delicate, herbaceous individuals measuring 10 cm tall to more robust, well-branched plants up to 1 m tall. In view of this polymorphism, the taxonomic circumscription of *S. erecta* has always been difficult, as expressed in the fact that it currently involves more than ten synonyms (Sastre 1968, 1971b). Regardless, *S. erecta* is easily differentiated from the remaining species in the *campos rupestres* by the combination of axillary solitary flowers with numerous external staminodes and five, free, petaloid internal staminodes.

Representative specimens examined: BAHIA: Abaíra, Bicota, alto da serra, no caminho para o Vira Saia, 13°19'42''S, 41°51'09''W, 1,600 m a.s.l., 12.XII.2009, fl. and fr., *D. Cardoso et al. 2832* (HUEFS). Mucugê, PARNA Chapada Diamantina, Guiné, Serra do Esbarrancado, subida do beco, 12°45'30"S, 41°30'43"W, 1,181 m a.s.l., 4.V.2009, fl. and fr., *D. Cardoso et al. 2657* (HUEFS). Rio de Contas, Arapiranga, próximo ao Rio da Galinha, Serra do Porco Gordo, 13°26'0''S, 41°45'8''W, 1,197 m a.s.l., 15.IV.2003, fl. and fr., *A.M. Giulietti et al. 2222* (HUEFS). MINAS GERAIS: Brumadinho, Serra da Calçada, 20°04'49''S, 44°14'19''W, 1,467 m a.s.l., 27.X.2009, fl. and fr., *D. Cardoso et al. 2745* (HUEFS). Catas Altas, RPPN do Caraça, caminho para a casa do pesquisador, 26.II.2014, fl. and fr., *C.A. Ferreira Junior et al. 1353* (HUEFS). Diamantina, Guinda, ao longo do córrego, ao lado direito da estrada, 18°14'34''S, 43°41'09''W, 1,400 m a.s.l., 29.X.2007, fl. and fr., *E.B. Miranda et al. 1047* (HUEFS). Santana do Riacho, MG-010, km 129, 19°14'10''S, 43°30'21''W, 1,345 m a.s.l., 27.I.2008, fl. and fr., *A. Rapini et al. 1598* (HUEFS). Santo Antônio do Itambé, subida para o Pico do Itambé, 5.II.2008, fl. and fr., *P.L. Ribeiro et al. 310* (HUEFS). São Gonçalo do Rio Abaixo, Estação Ambiental de Peti, 19°53'33''S, 43°21'55''W, 12.XII.2003, fl. and fr., *J.R. Stehmann 3456* (HUEFS).

Sauvagesia erecta has a pantropical distribution, being often considered a weed (Amaral & Bittrich 2014). It preferably inhabits environments on sandy and humid soils. In Brazil, it occurs from the coastal areas at 40 m a.s.l. to the mountains of the Espinhaço Range up to 1,800 m a.s.l. Flowering and fruiting specimens have been collected the whole year.

7. *Sauvagesia ericoides* (A.St.-Hil.) Sastre, Sellowia 23: 15. 1971. Fig. 2e

Subshrub up to 40 cm tall, densely branched from the base, branches erect. The flowers are pendent with petals opening widely and pale pink, the corona-like internal staminodal whorl pink, becoming white in the apex. The diagnostic features of *S. ericoides* with respect to its morphologically related *S. alpestris* were mentioned in the taxonomic comments about this species.

Representative specimens examined: Catas Altas, RPPN Santuário Serra do Caraça, Pico do Inficcionado, 20°08'09"S, 43°27'38"W, 1,900 m a.s.l., 23.V.2016,, fl. and fr., *D. Cardoso & Q.C. Santos 4113* (ALCB, HUEFS); Serra do Espinhaço, Serra do Caraça, 25.I.1971, fr., *H.S. Irwin et al. 29055* (F, K, NY); subida para o Pico do Inficcionado, 20°08'10''S, 43°27'40''W, 1,879 m a.s.l., 1.X.2008, fl. and fr., *C.T. Oliveira & P.L. Viana 135* (RB); RPPN Santuário do Caraça, Pico do Inficcionado, 20°08'08"S, 43°27'23"W, 1956 m a.s.l., 9.IX.2013, fl., *J. Ordones et al. 2222* (HUEFS); "sommet de la montagne de Caraça", without date, *A. Saint-Hilaire B1501* (type collection: P); Pico do Inficcionado, 2,030 m a.s.l., 24.IV.2000, fl., *M.F. Vasconcelos* (BHCB no. 53719); Serra do Caraça, Pico do Inficcionado, 1,870 m a.s.l., 2.IX.1999, fl., *M.F. Vasconcelos* (BHCB no. 48906).

Sauvagesia ericoides is likely narrowly endemic to the RPPN Santuário Serra do Caraça in the state of Minas Gerais, where it inhabits the sandstone *campos rupestres* in the mountain slopes in shady places at 1,750–2,030 m a.s.l. Flowering and fruiting specimens have been collected all over the year.

8. *Sauvagesia glandulosa* (A.St.-Hil.) Sastre, Sellowia 23: 16. 1971. Fig. 1a-b

Shrub up to 1 m tall, branches erect. The flowers are erect and star-like in shape, where the white petals open widely; the corona-like internal staminodal whorl becomes pink in the base. *Sauvagesia glandulosa* had a broad circumscription that encompassed the morphologically related *S. rubra* and *S. congesta*. Indeed, these species were earlier considered as varieties under *S. glandulosa*. Specific taxonomic considerations that help to differentiate *S. glandulosa* are given in the discussion of *S. rubra* and *S. congesta*.

Representative specimens examined: Belo Horizonte, Serra da Mutuca, 1,400 m a.s.l., 16.XI.1938, fl., *F. Markgraf & A.C. Brade 3531* (BHCB). Brumadinho, Retiro das Pedras, Serra da Calçada, 20°05'35''S, 43°59'01''W, 1,400 m a.s.l., 5.II.2002, fl. and fr., *P.L. Viana 505* (BHCB); Serra da Calçada próximo ao Condomínio Retiro das Pedras, 20°04'49''S, 44°01'41''W, 1,467 m a.s.l., 27.X.2009, fl., *D. Cardoso et al. 2741* (HUEFS). Moeda, Serra da Moeda, próximo à estrada que liga Moeda à BR-040, 18.X.1997, fl., *A. Salino 3577* (BHCB). Santana do Riacho, Serra do Cipó, afloramento rochosodas Canelas-de-Ema-Gigantes, próximo à portaria do IBAMA, Alto Palácio, 16.XI.1995, fl., *J.A. Lombardi 1021* (BHCB). São João Del-Rey, Serra do Lenheiro, X.1893, fl. and fr., *C.S. Schwacke 10143* (MO, RB). São Tomé das Letras, 1,200 m a.s.l., 2.III.1986, fl. and fr., *M. Pinter* (UEC no. 167432). Tiradentes, Serra de São José, 21°06'06''S, 44°12'10''W, 1,090 m a.s.l., 27.I.2007, fl. and fr., *F. Marino 223* (BHCB); "Serra de São José, prope urbem São João del Rey", without date, *A. St. Hilaire B22386* (type collection: P).

Sauvagesia glandulosa occurs only in the mountains of Minas Gerais state (Fig. 3d), on supergenic concretions of iron oxide and ferruginous concretions (*campo cerrado ferruginoso* locally known as *canga*), sandy soil between quartzite outcrops (*campo rupestre*) and sandy slopes, at 1,100–1,500 m a.s.l. It has been found in flower from October to February, and in fruit from December to April.

9. *Sauvagesia glanduloso-pubescens* (A.St.-Hil.) Queiroz-Lima & D.B.O.S. Cardoso, comb. nov. et stat. nov.

Lauradia capillaris A.St.-Hil. var. *B glandulosa* A.St.-Hil., Bull. Soc. Philom. Paris 1823: 175. 1823.

Lauradia capillaris var. *glanduloso-pubescens* A.St.-Hil., Hist. Pl. Remarq. Bresil 1: 76. 1824.

Lauradia capillaris var. *glanduloso-pubescens* A.St.-Hil., Fl. Bras. Merid. (A.St.-Hil.). 2: 156.1829.

TYPE: BRAZIL. Minas Gerais: [Alvorada de Minas, Itapanhoacanga] "*Itambé et Tapanhoacanga*", 1816-1821, *A. Saint-Hilaire 2136 4°* (lectotype, here designated: P no. P02441344; isolectotypes: P no. P02441345, P no. P02441346, no. MPU010782). Fig. 2c

Subshrub up to 40 cm tall, well-branched. It was initially described as a variety of *S. capillaris* (Saint-Hilaire 1823). However, the cylindrical stems with glandular laminar indument, often fimbriate covering all branches in *S. glanduloso-pubescens* is the striking feature unknown in any species of the genus that has made us to recognize its species status. The flowers are pendent, with relatively small, pink petals opening widely, while the corona-like internal staminodal is reddish-pink, becoming white in the base. A detailed morphological comparison of *S. glanduloso-*

pubescens is given in the taxonomic comments under its closely related *S. capillaris*.

Representative specimens examined: Barão de Cocais, 5.III.2003, fl. and fr., *L. Kollmann & R.L. Kollmann 6026* (RB). Diamantina, 1,400 m a.s.l., VI.1934,, fl. and fr., *A.C. Brade 13808* (P, RB). Felício dos Santos, Cachoeira do Sumidouro, 18°13'S, 43°15'W, 1,200 m a.s.l., 15.XI.2006, fl., *P.L. Viana et al. 2857* (BHCB, RB). Jaboticatubas, Serra do Cipó, 40 km ao norte, 18.I.1972, fl., *G. Hatschbach et al. 28859* (MBM). Santana do Riacho, rod. MG-010, estrada para Conceição do Mato Dentro, próximo km 138, próximo capão de mata, 18.XII.2006, fl. and fr., *F. Marinho et al. 214* (BHCB). Santo Antônio do Itambé, Morro do Pico do Itambé, 18°25'S, 43°21'W, 1,500 m a.s.l., 4.IV.1982, fl., *L. Rossi et al. CFCR2994* (HUEFS); Pico do Itambé, 1,500 m a.s.l., 9.VIII.1972, fl., *G. Hatschbach 30103* (MO).

We found that the type collection of *S. glanduloso-pubescens* is composed of four gatherings made by *A. Saint-Hilaire* (three at P and one at MPU). We chose the gathering at P no. P02441344 for lectotype because it clearly refers to the same locality and taxon name as provided in the original publications (Saint-Hilaire 1823, 1829).

Sauvagesia glanduloso-pubescens is only known from a few collections gathered in Minas Gerais state (Fig. 3c), where it shares with *S. capillaris* a similar ecological preference for the understory of more humid forests on the mountain slopes of the Serra do Espinhaço, at 1,200–1,500 m a.s.l. Flowering and fruiting specimens have been recorded during the entire year.

10. *Sauvagesia insignis* (Ule) Sastre, Sellowia 23: 16. 1971. Fig. 2g

Slender shrub up to 1.5 m tall, branches erect and without leaves at the base. The flowers are pendent and open widely, with pink, flat or revolute petals, and a pink corona-like internal staminodal whorl. *Sauvagesia insignis* somewhat resembles *S. nitida*, however it clearly differs on its slender shrubby, smaller than 1.5 m tall habit (*vs.* robust shrubs up to 2.5 m tall in *S. nitida*), considerably smaller leaves measuring 1.6–2 × 0.8–1 cm (*vs.* 2.5–4.6 × 1.5–2.5 cm), the loose paniculate inflorescences (*vs.* subcylindrical panicles composed of very congested lateral racemose shoots), and flowers with deep-pink petals (*vs.* white petals).

Representative specimens examined: Andaraí, Caeté-açu em direção ao Pati, 10.II.1989, fr., *M.C. Ferreira 181* (RB). Ibicoara, Chapada Diamantina, Serra da Batavia, 23.VI.2012, fl., *H.A. Ogasawara et al. GB217* (ALCB). Mucugê, Chapada de Diamantina, trilha do Paty, subida do bêco, 12°45'30''S, 41°30'36''W, 1,146 m a.s.l., 10.X.2010, fl. and fr., *N.F.O. Mota et al. 1666* (HUEFS); Serra do Esbarrancado, 12°43'51'S, 41°30'33''W, 1,200 m a.s.l., 1.XI.2011, fl. and fr., *R.P. Oliveira et al. 1975* (HUEFS); Guiné, subida para o beco do Pati, Serra do Esbarrancado, Chapada Diamantina, 12°45'S, 41°30'W, 1,186 m a.s.l., 27.I.2015, fr., *A. Queiroz-Lima et al. 147* (CEPEC). Palmeiras, PARNA Chapada Diamantina, Vale do Pati, 12°47'45"S, 41°28'13"W, 5.X.2015, fl. and fr., *T. Araújo 290* (HUEFS). Serra do Sincorá, 1,500 a.s.l., XI.1906, *E. Ule 7099* (type collection: G, K, L).

In Sastre's (1971a) taxonomic revision, when he lectotypified *S. insignis* he cited the wrong collection number "7899". This typo is corrected here so as the correct corresponding Ule's type material numbered "7099".

Sauvagesia insignis occurs in the *campos rupestres* of the Chapada Diamantina in Bahia state (Fig. 3b) at ca. 1,200 m a.s.l. Flowering specimens were collected from July to November, and fruiting set from September to May.

11. *Sauvagesia insolita* Queiroz-Lima & D.B.O.S. Cardoso, Phytotaxa 316(1): 60. 2017.

Shrub up to 1.5 m tall, branches erect, without leaves at the base. The flowers pendent, opening widely, sometimes the petals reflexed distally, with reddish-pink petals and internal staminodal whorl; free external staminodes eventually present in some flowers. *Sauvagesia insolita* is morphologically related to *S. paganuccii*. However, *S. insolita* are single-stemmed, few-branched, erect shrubs (*vs.* multi-stemmed subshrubs that are densely branched from base in *S. paganuccii*) and has leaves not exceeding 45° to the branch (*vs.* leaves ca. 90° to the branch), broadly elliptic to ovate with length/width ratio 2:1 (*vs.* narrowly elliptic leaves with length/ width ratio 3:1), and the margin homogeneously crenulate (*vs.* margin irregularly crenulate, the crenulae more spaced basally and closer distally). Moreover, based on the number of pedicel scars along the inflorescence axes, we estimate that *S. insolita* has a bloom of less than 20 flowers (*vs.* bloom of ca. 70 flowers).

Representative specimens examined: Miguel Calmon, trilha do campo limpo, 11°23'23"S, 40°31'32"W, 1,270 m a.s.l., 7.V.2005, fl., *V. Barreto et al. 36* (HUEFS); Parque Estadual das Sete Passagens, trilha do Campo Limpo, 11°23'48''S, 40°31'42''W, 1,052 m a.s.l., 25.IX.2015, fl. and fr., *A. Queiroz-Lima et al. 152* (type collection: ALCB, CEPEC, F, HUEFS, K, NY, RB, SPF); Piemonte da Chapada, 11°22'19''S, 40°31'06''W, 1,144 m a.s.l., 17.VI.2006, *J.S. Santos et al. 89* (ALCB); Piemonte da Chapada, trilha para a Grota de Dona Antônia, 11°20'S, 40°31'W, 2.VIII.2006, fl., *J.S. Santos et al. 141* (ALCB).

Sauvagesia insolita is probably narrowly endemic to the *campo rupestre* vegetation at Sete Passagens State Park of Bahia, the northeastern most extreme portion of the Espinhaço Range, that lies outside the mountain tops of the Serra do Sincorá in Chapada Diamantina. The highland rocky grassland where *S. insolita* occurs is characterized by a mixed vegetation comprised of grasses and herbs, as well as subshrubs, shrubs, and sparsely-distributed trees. Flowering and fruiting specimens were recorded from May to September.

12. *Sauvagesia lagevianae* D.B.O.S. Cardoso, Brittonia 63(1): 151. 2011.

Shrub forming a clump up to 1.5 m diam., each individual aerial shoot erect and usually unbranched. Flowers nodding, appearing slightly tubular-campanulate due to the ascending, imbricate petals; the petals light to dark pinkish, and the inner staminodal whorl deep pink, with a white tip. The taxonomic comments of *S. lagevianae* are presented under *S. congesta.*

Representative specimens examined: Diamantina, Chapada do Couto, 20.XI.1937, fl., *H.L. de Mello-Barreto 9904* (ESA). Rio Vermelho, Serra da Pedra Menina, 18º06'55''S, 43º08'17''W, 30.X.2009, fl., *D. Cardoso et al. 2773* (BHCB, HUEFS); Pedra Menina, platô Pedra Menina, 1,460 m a.s.l., 9.IX.1986, fl., *R. Mello-Silva et al. CFCR10237* (P); Serra da Pedra Menina, 18º06'55''S, 43º08'17''W, 10.IV.2006, fl., *P.L. Viana et al. 2489* (BHCB, RB); Pedra Menina, Serra da Pedra Menina, 18º06'49"S, 43º08'23"W, 1,503 m a.s.l., 30.X.2009, fl. and fr., *P.L. Viana et al. 4436* (type collection: BHCB, BHO, BR, CEPEC, CTES, F, G, HUEFS, INPA, K, LE, LPB, MBM, MEXU, MG, MO, NY, P, RB, S, SPF, UEC, US, VEN).

Sauvagesia lagevianae occurs in the Diamantina Plateau in Minas Gerais state (Fig. 3d), where it grows on quartzite-sandstone outcrops and sandy soils at ca. 1,500 m a.s.l. It has been found flowering from September to November and in April, and fruiting in October.

13. *Sauvagesia linearifolia* A.St.-Hil., Bull. Soc. Phil. Paris 174. 1823. Fig. 2i

Herb to shrub 15–60 cm tall, erect, mostly poorly branched at the apex. Flowers erect, the petals opening widely, white to pale-pink; the internal staminodia purplish. *Sauvagesia linearifolia* is morphologically similar to *S. tenella*. Both occur in periodically flooded environments, but their leaves are somewhat different. *Sauvagesia linearifolia* has obovate petals (*vs*. slightly unguiculate in *S. tenella*) that remain revolute in the upper half (*vs*. flat). Also, *S. tenella* has never been recorded in the Espinhaço Range.

Representative specimens examined: BAHIA: Rio de Contas, caminho para o Pico das Almas, próximo ao Rio Brumado no caminho para a fazenda Silvina, 13°45'S, 42°24'W, 10.II.2002, fl., *A.M. Giulietti & R.M. Harley 2510* (HUEFS). MINAS GERAIS: Diamantina, 14.IV.1892, fl. and fr., *C.A.W. Schwacke 8149* (RB); "Distrito dos Diamantes, prope locum ubi eruentur adamantes quem vulgovocant Serviço do Rio Pardo", 1816-21, *A. Saint-Hilaire B12045* (type collection: P). Grão Mogol, 8 km W of Grão Mogol, 950 m a.s.l., 16.II.1969, fl. and fr., *H.S. Irwin et al. 23335* (NY); ca. 31 km NE of Francisco Sá, road to Salina, 1,100 m a.s.l., 11.II.1969, fl. and fr., *H.S. Irwin et al. 23043* (NY). Joaquim Felício, Serra do Cabral, 17°42'29''S, 44°11'31''W, 16.V.1999, fl. and fr., *V.C. Souza et al. 22448* (ESA). Santana do Riacho, Serra do Cipó, 118 km, 31.I.1965, fl. and fr., *A.P. Duarte 9047* (RB); Serra do Cipó 128 km, 18.IV.1950, fl. and fr., *A.P. Duarte 2557* (RB). Três Marias, fazenda Araras e outras, 23.VI.2005, fl. and fr., *E. Temeirão Neto 3878* (BHCB). Uberlândia, Reserva do Clube Caça e Pesca Itororó, 4.XII.1998, fl. and fr., *A.F. Amaral et al. 1973* (HUFU).

Despite being a relatively widespread species in the savannas of Central Brazil, *S. linearifolia* is only known from a few collections in the *campos rupestres* of Bahia and Minas Gerais states. It usually grows on sandy and flooded soils at 380–767 m a.s.l. Flowering and fruiting specimens have been found during the whole year.

14. *Sauvagesia nitida* Zappi & E. Lucas, Kew Bull. 57(3): 711. 2002. Fig. 2f

Shrub to small tree up to 2.5 m tall, branches erect and without leaves at the base. Flowers erect with white petals opening widely and the internal staminodal whorl pink. *Sauvagesia nitida* is morphologically similar to *S. insignis*, but was also long confounded with *S. glandulosa* (Zappi & Lucas 2002). The morphological differences of *S. nitida* from *S. insignis* are presented in the taxonomic comments under this species. The main features that are helpful to distinguish *S. nitida* from *S. glandulosa* are the 6–9 mm long stipules (*vs*. 9–13 mm long in *S. glandulosa*), leaf apex non-mucronate or only shortly mucronate (*vs*. distinctly mucronate), and the pink corona (*vs*. white with the base pink).

Representative specimens examined: Abaíra, distrito de Catolés, Mata do Bem querer, Tanque do Garimpo, 1,500 a.s.l., 13°16'S, 41°53'W, 14.V.1992, fl., *W. Ganev 273* (type collection: HUEFS, K, SPF); Campos de Ouro Fino, 13°16'S, 41°54'W, 1,650 m a.s.l., 14.VII.1992, fr., *W. Ganev 652* (K); Lapinha, próximo

ao Garimpo da mata, 13°17'S, 41°53'W, 1,400 m a.s.l., 14.IX.1992, fl., *W. Ganev 1087* (K); Campo de Ouro Fino (baixo), 13°15'S, 41°54'W, 1,700 m a.s.l., 10.I.1992, fl., *R.M. Harley et al. 50713* (K, HUEFS); Catolés, Serra dos Cristais, 13°19'33''S, 41°52'56''W, 1,600 m a.s.l., 20.V.1999, fl., *V.C. Souza et al. 22941* (ESA). Ibicoara, 15 km em direção à cidade, 12°55'S, 41°19'W, 21.VIII.1986, fl., *R.P. Orlandi et al. 747* (CEPEC). Lençóis, Serra Larga ("Serra Larguinha") a oeste de Lençóis, perto de Caeté-Açu, 1,400 m a.s.l., 12.XII.1984, *A. Furlan et al. CFCR7209* (K). Palmeiras, Parque Nacional Chapada Diamantina - Serra da Fumaça, 12°36'24''S, 41°28'52''W, 1,200 m a.s.l., 30.VII.2012, fl., *G. Almeira-Silva et al. 273* (HUEFS). Mucugê, Chapada Diamantina, Serra do Esbarrancado, 12°45'S, 41°30'W, 1,100 m a.s.l., 9.IX.2006, fl., *A.A. Conceição & P.D. Carvalho 1815* (HUEFS). Rio de Contas, caminho Boa Vista-Mutuca Corisco, próximo ao Bicota, 13°05'S, 42°21'W, 1,325 m a.s.l., 2.IX.1993, fl. and fr., *W. Ganev 2182* (HUEFS).

Sauvagesia nitida occurs only in Chapada Diamantina in Bahia state (Fig. 3b). This species is encountered on sandy and clayey slopes, between rocks in the *campo rupestre* as well as riparian forests, between 1,100–1,900 m a.s.l. It flowers between May and January and fruiting specimens were recorded from July to January.

15. *Sauvagesia oliveirae* Harley & Giul., Kew Bull. 60(4): 578. 2005.

Shrub 0.5–1.3 m tall, erect, the stems leafless below, well-branched in the apex, scars of the insertion of stipules very evident. Flowers pendent, campanulate-like, with both petals and internal fused staminodes deep pink. *Sauvagesia oliveirae* is among the few species of *Sauvagesia* characterized by the remarkable needle-like or acicular leaves, all of which endemic to Chapada Diamantina of Bahia (Fig. 3a). It can be readily recognized by the combination of much smaller leaves, less than 4 mm long, the nearly-campanulate and nodding flowers, and the sepals distinctly marked by transparent thickened glands along the margins.

Representative specimens examined: Mucugê, Serra do Gobira, acesso pela BA-142, sentido Mucugê-Ibicoara, ramal da Fazenda Caraíba em direção à Comunidade Capão do Correia, 13°05'38''S, 41°22'17''W, 1,457 m a.s.l., 25.I.2015, fl. and fr., *D. Cardoso et al. 3665* (HUEFS); Gobira, 13°05'S, 41°22'W, 16.IX.2006, fl. and fr., *A.A. Conceição et al. 1866* (HUEFS, UEC); Gobira, 13°05'S, 41°22'W, 1,400 m a.s.l., 30.I.2009, fl., *A.A. Conceição 3181* (HUEFS); Serra do Gobira, cume do Campo do Gobira, 1,500 m a.s.l., 13°04'S, 41°22'W, 15.II.2002, fl. and fr., *R.M. Harley et al. 54493* (type collection: CTES, HUEFS, K); caminho para o cume da Serra do Gobira, ca. 8,4km ao sul de Mucugê em linha reta, 13°04'34''S, 41°22'42''W, 1,477 m a.s.l., 19.I.2005, fl. and fr., *R.M. Harley et al. 55385* (CEPEC, HUEFS); Serra do Gobira, 13°04'24''S, 41°22'46''W, 1,471-1,568 m a.s.l., 21.I.2005, fl. and fr., *J.G. Nascimento et al. 314* (HUEFS); Bacia do Gobira, Chapada Diamantina, 13°07'81''S, 41°37'67''W, 1,452 m a.s.l., 27.I.2015, fl. and fr., *A. Queiroz-Lima et al. 134* (CEPEC); Pico do Gobira, 13°04'54''S, 41°22'36''W, 3.III.2007, fl. and fr., *A.K.A. Santos et al. 1104* (HUEFS).

Sauvagesia oliveirae has been encountered thus far only in the Gobira peak of the Chapada Diamantina region (Fig. 3a), where it grows on sandy soil between rocks at ca. 1,500 m a.s.l. Flowering and fruiting specimens have been recorded from September to March.

16. *Sauvagesia paganuccii* D.B.O.S. Cardoso & Harley, Syst. Bot. 40(3): 777. 2015.

Shrub up to 1.2 m tall, densely branched from the base, the branches erect and leafless below. Flowers erect with petals reddish-pink and opening widely, and the internal staminodia reddish-pink. We have provided a morphological discussion for *S. paganuccii* in the taxonomic section of its morphologically closely related *S. insolita*.

Representative specimens examined: Ruy Barbosa, ARIE Serra do Orobó, topo da Serra, próximo ao afloramento Dedo de Deus, 12°19'03''S, 40°29'00''W, 1,020 m a.s.l., 7.I.2007, fl. and fr., *D. Cardoso et al. 1489* (HUEFS); Serra do Orobó, campo rupestre na encosta do paredão ao lado do afloramento Dedo de Deus, 12°18'48''S, 40°28'53''W, 960 m a.s.l., 17.I.2015, fl. and fr., *D. Cardoso & G. Ramos 3578* (ALCB, HUEFS); Serra do Orobó, topo da Serra, 12°18'45''S, 40°28'51''W, 1,015 m a.s.l., 12.IX.2004, fl., *L.P. de Queiroz et al. 9747* (type collection: HUEFS, K, RB); Serra do Orobó, afloramentos rochosos do topo, próximo ao Dedo de Deus, 12°18'S, 40°20'W, 1,020 m a.s.l., 16.VIII.2005, fl., *A.K.A. Santos & P.L. Ribeiro 452* (HUEFS).

Sauvagesia paganuccii is apparently endemic to Serra do Orobó in the municipality of Ruy Barbosa, Bahia, where it grows in more humid and shady rocky cliffs at ca. 1,000 m a.s.l. This *campo rupestre* vegetation is disjunct with the core area of the Serra do Sincorá in Chapada Diamantina. Flowering from August to January and fruiting from November to January.

17. *Sauvagesia paniculata* D.B.O.S. Cardoso & A.A. Conc., Brittonia 60(4): 306. 2008.

Shrub up to 2 m tall, erect, stems leafless below, well-branched to the apex, sometimes sprouting from lateral buds at the base after burning, with conspicuous stipular tissue. Flowers

pendent, campanulate-like in shape, the pale pink to white petals overlapping; corona-like fused staminodes deep pink. *Sauvagesia paniculata* differs from the remaining acicular-leaved species of *Sauvagesia* by the unique combination of larger, 18–26 mm long leaves, paniculate inflorescence, and the nearly-campanulate-shaped flowers with white petals.

Representative specimens examined: Mucugê, Serra do Esbarrancado, Parque Nacional da Chapada Diamantia, gerais com afloramento, 12°43'51''S, 41°30'33''W, 1,500 m a.s.l., 16.IV.2005, fl., *A.A. Conceição & D. Cardoso 1270* (HUEFS); Chapada Diamantina, Serra do Esbarrancado, 12°43'51''S, 41°30'33''W, 1,500 m a.s.l., 15.IX.2006, fl. and fr., *A.A. Conceição & D. Cardoso 1835* (type collection: CEPEC, HUEFS, K, MBM, NY, P, RB, SP); Serra do Esbarrancado, 12°45'23''S, 41°30'29''W, 1,400 m a.s.l., 2.IV.2011, fl. and fr., *A.A. Conceição et al. 3336* (HUEFS); Distrito de Guiné, PARNA Chapada Diamantina, Serra do Esbarrancado, 12°45'31''S, 41°30'33''W, 1,417 m a.s.l., 5.I.2009, fl. and fr., *D. Cardoso et al. 2673* (CEPEC, HUEFS); Guiné, Serra do Esbarrancado, Chapada Diamantina, 12°45'S, 41°30'W, 1,368 m a.s.l., 27.I.2015, fl. and fr., *A. Queiroz-Lima et al. 145* (ALCB, CEPEC, HUEFS).

Sauvagesia paniculata has been collected only in the Serra do Esbarrancado of the Chapada Diamantina in Bahia state (Fig. 3a) at ca. 1,500 m a.s.l., where it often occurs associated with rocky outcrops. Flowering and fruiting specimens were collected from January to September.

18. *Sauvagesia racemosa* A.St.-Hil., Bull. Soc. Phil. Paris 173: 1823.

Shrub up to 1 m tall, erect, stems leafless below, glabrous, few-branched in the apex, scars of the insertion of stipules very evident in branches. Flowers opening widely and reflexed, with

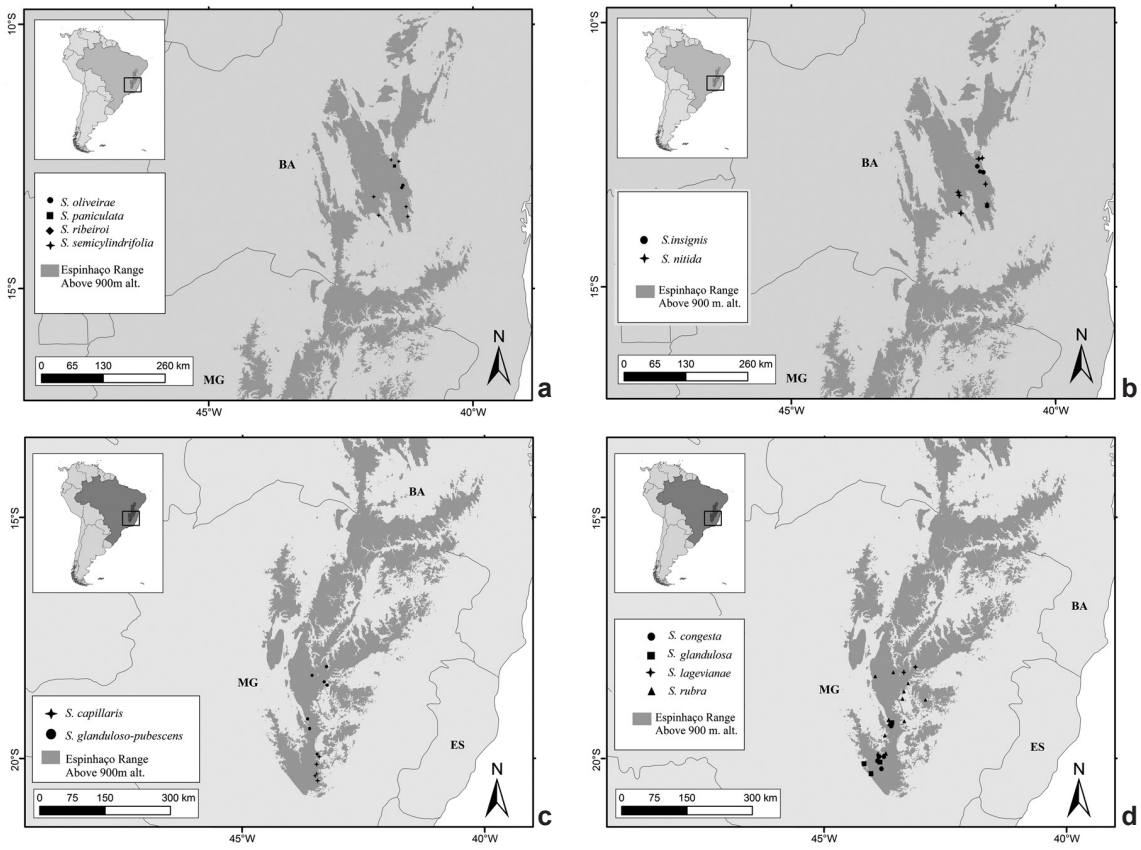

Figure 3 – a-d. Geographical distribution of *Sauvagesia* species in the Brazilian Espinhaço Range – a. the acicular-leaved species *Sauvagesia oliveirae*, *S. paniculata*, *S. ribeiroi*, and *S. semicylindrifolia*; b. the morphologically closely related species *S. insignis* and *S. nitida*; c. the *S. capillaris* species complex comprised of *S. capillaris* and *S. glanduloso-pubescens*; d. the closely related species *S. congesta*, *S. glandulosa*, *S. rubra*, and *S. lagevianae*, all of which largely marked by the gland-bearing leaves with expanded lamina.

pale-pink petals, external staminodes numerous, filamentous, and the petaloid internal staminodes completely free, pink, and with white apex. *Sauvagesia racemosa* is similar to the Amazonian species *S. ramosa* (Gleason) Sastre, from which it has usually been confused in herbarium collections. However, *S. racemosa* differs by the leaves scattered along the branches (*vs*. densely arranged in *S. ramosa*), acute or obtuse at the apex (*vs*. acuminate), the margin callose-crenate (*vs*. revolute), inflorescence a simple raceme 5–11 cm long (*vs*. compound raceme or panicles 10–17 cm long). With respect to the *Sauvagesia* species found in the Espinhaço Range, *S. racemosa* may only be confounded with some robust individuals of *S. erecta* that bear coriaceous leaves. Nevertheless, *S. racemosa* never has solitary flowers at leaf axils, which is a diagnostic feature for *S. erecta*.

Representative specimens examined: Barbacena, 23.VI.1879, fl. and fr., *A.F.M. Glaziou 10275* (R). Betim, fazenda do Cambuí, 10.VI.1945, fl. and fr., *L.O. Williams & V. Assis 7350* (NY). Gouveia, rod. Diamantina - Gouveia, BR-259, 300 m sul do entroncamento para Datas, a oeste da rodovia, 18°25'35''S, 43°41'30''W, 1,346 m a.s.l., 22.I.2004, fl. and fr., *R. Mello-Silva et al. 2442* (SPF). Grão Mogol, Lagoa Nova, assentamento americana, ponto 4, 16°19'01''S, 43°01'45''W, 869 m a.s.l., 27.V.2005, fl. and fr., *A.C. Sevilha et al. 4554* (CEN). Ouro Preto, Itacolomi, II.1839, fl. and fr., *P. Claussen* (BR no. 0000005854585); estrada velha Ouro Branco-Ouro Preto, ca. 16 km de Ouro Branco, 20°27'48''S, 43°35'24''W, 1,200 m a.s.l., 9.III.1995, fl. and fr., *V.C. Souza et al. 8069* (ESA). Paraopeba, fazenda da Vargem Grande, 19.V.1958, fl. and fr., *E.P. Heringer 2430* (NY). Patrocínio, fazendas da Terra, Boa vista, XII.1998, fl. and fr., *F.T. Farah et al. 551* (ESA). Pouso Alegre, 2.V.1927, fl. and fr., *F.C. Hoehne* (NY no. 00919383). Unaí, Area de influência da UHE de queimado, fazenda Unai-Brasília, 8.X.2002, fl., *E. Temeirão 3556* (HUEFS).

Sauvagesia racemosa has a wide distribution throughout the Brazilian savannas (Cerrado domain). In Brazil, this species has been recorded in the states of Bahia, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, São Paulo, and Tocantins. It is usually associated with sandy and flooded soils at 380–774 m a.s.l. Flowering and fruiting individuals were recorded during the whole year.

19. *Sauvagesia ribeiroi* Harley & Giul., Kew Bull. 60(4): 576. 2005.

Shrub 0.5–1 m tall, erect, stems leafless below, well-branched to the apex, scars of the insertion of stipules very evident in branches. Flowers opening widely, the petals pink and the fused internal staminodes pink with white apex. *Sauvagesia ribeiroi* was largely misidentified among the herbarium collections as the morphologically very similar, acicular-leaved species *S. semicylindrifolia*. In addition to sharing needle-like leaves, both species have flowers with pink, star-like shaped corolla. However, *S. ribeiroi* differs by having a multi-stemmed subshrubby habit with the leaves never shedding at the base of the branches (*vs*. mostly single-stemmed, ericoid shrubs, the leaves more clustered at branchlet apices in *S. semicylindrifolia*), leaf lamina crenulate-glandular at the margin and measuring less than 15 mm long (*vs*. leaves entire and 20 cm long), and flowers with glandular sepals (*vs*. sepals without glands).

Representative specimens examined: Mucugê, Alto Gobira, 13°04'55''S, 41°22'39''W, 1,459 m a.s.l., 24.VII.2007, fl., *A. Rapini 1412* (HUEFS); Gobira, 13°04'38''S, 41°22'31''W, 4.VIII.2004, fl. and fr., *E.L. Borba et al. 1801* (HUEFS, MBM); Gerais do Gobira, 13°05'S, 41°22'W, 18.VIII.2012, fl., *J.C. Brito et al. 189* (HUEFS); Gobira, no gerais, 13°05'S, 41°22'W, 15.IX.2006, fl. and fr., *D. Cardoso et al. 1385* (ESA, HUEFS, MO, UEC); Serra do Gobira, acesso pela BA-142, sentido Mucugê-Ibicoara, ramal da Fazenda Caraíba em direção à Comunidade Capão do Correia, 13°05'38''S, 41°22'17''W, 1,457 m a.s.l., 25.I.2015, fl. and fr., *D. Cardoso et al. 3662* (HUEFS); Chapada Diamantina, 13°05'S, 41°22'W, 1,450 m a.s.l., 3.VII.2012, fl., *A.A. Conceição et al. 4118* (HUEFS); Serra do Gobira, campo do Gobira, 13°4'54''S, 41°22'36''W, 1,478 m a.s.l., 15.II.2002, fl. and fr., *R.M. Harley et al. 54477* (type collection: HUEFS, K); 13°41'S, 41°22'W, 1,419 m a.s.l., 27.I.2015, fl. and fr., *A. Queiroz-Lima et al. 135* (CEPEC); Chapada Diamantina, Pico do Gobira, área encharcada no sopé do morro, ás margens de um pequeno curso d'água, 13°04'36''S, 41°22'40''W, 1,471 m a.s.l., 20.I.2005, fl., *E.B. Souza et al. 997* (HUEFS).

Sauvagesia ribeiroi have been encountered only in the Gobira peak, in the Chapada Diamantina of Bahia state (Fig. 3a), where it grows on sandy soil between rocks at ca. 1,500 m a.s.l. Flowering specimens were collected from July to January, and fruiting set from August to January.

20. *Sauvagesia rubra* (A.St.-Hil.) Queiroz-Lima & D.B.O.S. Cardoso, comb. nov. et stat. nov.

Lauradia glandulosa var. *rubra* A.St.-Hil., Bull. Soc. Phil. Paris 1823: 175. 1823.

Lauradia glandulosa var. *rubra* A.St.-Hil., Hist. Pl. Remarq. Bresil 1: 74. 1824.

Lauradia glandulosa var. *rubra* A.St.-Hil., Fl. Bras. Merid. (A. St.-Hil.) 2: 156. 1829.

TYPE: BRAZIL. Minas Gerais: "Ponte Alta, à la Serra d'Itambé, cap des Mines", 1817, *A. Saint-Hilaire 409* (lectotype, here designated: P no. P02441378). Fig. 1c-d

Shrub up to 1 m tall, branched, erect, and without leaves at the base. The flowers are erect and with pink petals opening widely whereas the fused internal staminodes are pink, becoming white in the apex. *Sauvagesia rubra* is readily distinguished from its morphologically related *S. glandulosa* by the stipules and leaves loosely imbricate (*vs.* the branches densely covered by stipules and imbricate leaves in *S. glandulosa*), the leaf mucron at the apex measuring ca. 1 mm long (*vs.* ca. 5 mm long), larger, ca. 22 cm long inflorescences (*vs.* ca. 12 cm long), stalked glands along the sepals margin (*vs.* conical glands), pink petals (*vs.* white), corona entirely pink (*vs.* white becoming pink in the base). **Representative specimens examined**: Alvorada de Minas, Tapanhoacanga, without date, fl. and fr., *J. Pohl* (W no. 0071190). Belo Horizonte, margem da Represa da Pampulha, 1953, fl., *J.M.P. Sobrinho* (BHCB no. 13197). Caeté, Serra Cabeça de Boi, 26.XI.1942, fl. and fr., *M. Magalhães 2420* (P). Conselheiro da Matta, VI.1934, fl. and fr., *A.C. Brade 13804* (RB). Diamantina, 1,350 m a.s.l., 16.XI.1971, fl. and fr., *G. Hatschbach 28080* (MO). Guanhães, Serra da Candonga, 1816, fl. and fr., *A. Saint-Hilaire* (445?) (P no. 04875776). Jaboticatubas, Serra da Ponte da Pedra, 21.XI.1942, fl., *M. Magalhães 2563* (BHCB). Santa Luzia, Serra do Cipó, km 134 - estrada do Pilar, 3.II.1934, fl. and fr., *H.L. Mello Barreto 7778* (BHCB). Santana do Pirapama, Serra do Cipó, Serra da Lapa, Distrito São José da Cachoeira, trilha da captação da fazenda Toucan, 19°00'22''W, 43°45'20''S, 680 m a.s.l., 17.II.2007, fl. and fr., *V.C. Souza et al. 32584* (BHCB, K, RB). Santana do Riacho, Serra do Cipó, between km 111 and 128 on road from Hotel Chapeu do Sol, 1,200 m a.s.l., 20.XII.1959, fl. and fr., *B. Maguire 44702* (NY); Lapinha de Cima, 19°05'17''S, 43°41'04'W, 1,495 m a.s.l., 20.V.2016, fl. and fr., *D. Cardoso & Q.C. Santos 4098* (ALCB, HUEFS). Santo Antônio do Itambé, Itambé, Capão de Minas, 1843, fl., *A. Saint-Hilaire 323* (MO). Serro, Serra do Frio, fr., *A. Richard 2835* (W). Tiradentes, Serra do Lenheiro, 1,300 m a.s.l., 25.IV.1957, fr., *E. Pereira 3151 & G. Pabst 3986* (HUEFS, RB).

This species was originally described as a variety under the name *Lauradia glandulosa* var. *rubra* (Saint-Hilaire, 1823, 1829). Three different locations ("Itambé", "Ponte Alta", and "Candonga") were cited in the original publications, for which we were able to locate seven gatherings at P and K herbaria. We chose the specimen P no. P02441378 for lectotype, because it is the most complete and has the associated labels clearly matching with the original locality "Ponte Alta".

Sauvagesia rubra occurs in Minas Gerais state (Fig. 3d), on sandy soil between quartzite outcrops (*campo rupestre*), swampy fields. It is always associated with places where water accumulates. It occurs at 680–1,300 m a.s.l. Flowering recorded from April to February and fruiting set from November to February.

21. *Sauvagesia semicylindrifolia* Sastre, Bull. Jard. Bot. Natl. Belg. 51(3–4): 398. 1981.

Shrub 0.4–1.2 m tall, erect, stems leafless below, well-branched to the apex, and scars of the insertion of stipules very evident in branches. Flowers, opening widely with pink petals and fused internal staminodes pink, with the apex white. *Sauvagesia semicylindrifolia* is the most widespread of the acicular-leaved *Sauvagesia* species, all of which are endemic of the *campos rupestres* in Chapada Diamantina of Bahia state (Fig. 3a). A detailed morphological comparison of *S. semicylindrifolia* is given in the taxonomic notes of *S. ribeiroi*.

Representative specimens examined: Abaíra, Catolés, Serra do Barbado, ao longo do caminho da forquilha da Serra, entre 13°17'27''S, 41°54'06''W e 13°17'50''S, 41°54'29''W, 1,750-2,035 m a.s.l., 26.II.1994, fl., *P.T. Sano et al. CFCR14620* (CEPEC); Riacho da Taquara, 13°15'S, 41°55'W, 1,800 m a.s.l., 29.I.1992, fl., *B. Stannard et al. H50821* (K); estrada Ituaçu-Barra da Estiva, a 8 km de Barra da Estiva, Morro do Ouro, 19.VII.1981, fl., *A.M. Giulietti et al. CFCR1272* (K). Ibicoara, a 15 km em direção à cidade, 12°55'S, 41°19'W, 21.VIII.1986, fl. and fr., *R.P. Orlandi et al. 753* (CEPEC). Lençóis, Serra Larga ("Serra Larguinha"), a oeste de Lençois, 1,400 m a.s.l., 12.XII.1984, fl., *A. Furlan et al. CFCR7162* (K). Palmeiras, caminho para a cachoeira da Fumaça a partir do Capão, 12°35'53''S, 41°29'32''W, 1,050 m a.s.l., 20.X.2014, fl. and fr., *L.P. Queiroz 16016* (HUEFS); PARNA Chapada Diamantina, Cachoeira da Fumaça, 12°36'12''S, 41°27'56''W, 1,316 m a.s.l., 9.IV.2015, fl., *A. Queiroz-Lima et al. 153* (CEPEC). Rio de Contas, Serra das Almas, middle and upper NE slopes of the Pico das Almas ca. 25 km WNW of the Vila do Rio do Contas, 1,600-1,850 m a.s.l., 19.III.1977, *R.M. Harley 19679* (type collection: CEPEC, K, P, SPF); Pico da Almas, vertente leste, vale ao sudeste do Campo do Queiroz, 13°32'S, 41°57'W, 1,500 m a.s.l., 2.XII.1988, fl. and fr., *R.M. Harley et al. 26562* (K).

Sauvagesia semicylindrifolia thrives on sandy soil between quartzite outcrops at 1,000–2,035 m a.s.l. Flowering and fruiting specimens were collected all over the year.

22. *Sauvagesia setulosa* Queiroz-Lima & D.B.O.S. Cardoso, Syst. Bot. 42(2): 346. 2017.

Subshrub up to 40 cm tall, branched from the base, branches erect, ericoid, the leaves clustered at branch apices and caducous at the base. Flowers nearly campanulate-like, nodding, petals white, and the fused internal staminodes reddish-pink, becoming white in the apex. *Sauvagesia setulosa* is unlike among all species of *Sauvagesia* because of its dwarf subshrubby habit with a unique combination of morphological features: the remarkable bristle-bearing leaves and flowers with white petals that are borne on terminal, umbel-like fascicules of dichasial cymes. It can be tentatively associated to the species of subsect. *Vellozianae* that also have umbel-like inflorescences: *S. ericoides*, *S. oliveirae*, *S. ribeiroi*, and *S. semicylindrifolia*. However, most of these species grow mostly as shrubs up to 1.3 m tall, the leaves never bearing marginal stalked glands, and the flowers have pink petals. A notable, non-overlapping ecological feature of *S. setulosa* helps to distinguish it from the previously mentioned species: it often inhabits open grassy *campo rupestre* on sandy moist soils, whereas the others are always directly associated with rocks or sandy hillsides amongst rocks.

Representative specimens examined: Diamantina, Parque Nacional das Sempre-Vivas, estrada para o alojamento, 17°57'07''S, 43°46'44''W, 1,258 m a.s.l., 9.I.2016, fl. and fr., *A.M. Amorim et al. 10257* (CEPEC, HUEFS, HUESC, MBM, NY, RB); 9.I.2016, fl. and fr., *D. Cardoso et al. 3920* (ALCB, CEPEC, HUEFS, K, NY, RB); Parque Nacional das Sempre-Vivas, estrada para o renegado, perto da Nhá Sica, 17°50'56''S, 43°45'40''W, 1,194 m a.s.l., 16.XII.2011, fl. and fr., *D.J.P. Gonçalves et al. 343* (DIAM, UEC); Parque Nacional das Sempre-Vivas, estrada para o alojamento, campo rupestre, solo arenoso úmido, 17°57'07''S, 43°46'44''W, 1,258 m a.s.l., 9.I.2016, fl. and fr., *A. Queiroz-Lima et al. 183* (type collection: ALCB, BHCB, CEPEC, DIAM, HUEFS, K, MBM, MO, NY, P, RB, SPF).

Sauvagesia setulosa is only known from the *campo rupestre* vegetation at Sempre Vivas National Park in Minas Gerais. It often occurs in open grassy vegetation on moist sandy soil ca. 1,300 m a.s.l. Both flowering and fruiting specimens were collected from December to January.

23. *Sauvagesia spicata* (Glaz. *ex* Dwyer) Queiroz-Lima & D.B.O.S. Cardoso, Syst. Bot. 43(1): 225. 2018.

Shrub up to 1–2 m tall, erect, branched mainly at the apex, branches conspicuously covered with densely-imbricate leaves and stipules on short rosette-like fascicles. Flowers erect, petals white, opening widely, resulting in a star-like shape, and the corona-like fused internal staminodia reddish-pink. *Sauvagesia spicata* had long been treated as a synonym of the morphologically similar *S. elegantissima* (Sastre 1971), but it was recently re-established (Queiroz-Lima *et al.* 2018). This species is distinct within the *S. elegantissima* species complex (*S. bryoclada*, *S. elegantissima*, and *S. spicata*) by the larger flowers, the petals measuring 5–7 × 3–3.5 mm and staminodal whorl 3–6 mm long, the stalked-glands on the sepal margin, as well as the heteromorphic leaves, where the leaves towards the inflorescences are often glandular on the margin. Furthermore, *S. spicata* can be separated from *S. elegantissima* by its multi-stemmed shrubby habit that is densely branched from the base (*vs.* poorly-branched, single-stemmed shrub), the 4–8 mm thick branchlets (*vs.* slender, 2.5–4 mm thick), the lax, 20–30-flowered, 2.3–10 cm long bostryx inflorescences (*vs.* congested, 10–20-flowered, 1.3–2.2 cm long bostryx), flowers with 4–10 cm long pedicels (*vs.* flowers with shorter, 3–6 cm long pedicels). We have also observed that the vegetative branches of *S. spicata* are often infested with galls that are deceptively similar in shape to the fruits.

Representative specimens examined: Grão Mogol, Jambeiro a 7 km de Grão Mogol, 5.IX.1985, fl. and fr., *D.C. Zappi et al. CFCR8511* (F, HUEFS, K, NY, P, UB); Parque Estadual de Grão Mogol, Serra do Curiacá, a partir do meio da encosta até o topo no ponto georreferenciado, 16°21'34''S, 42°52'30''W, 1,202 m a.s.l., 24.VI.2014, fl. and fr., *M. Verdi et al. 7117* (HUFU, RB); Serra Grão Mogol, 900-1,100 m a.s.l., 17.VIII.1960, fl. and fr., *B. Maguire et al. 49240* (MO, NY). Itabirito, Morro de São Vicente, 30.VI.1884, fl. and fr., *A.F.M. Glaziou 14496a* (type collection: F, MO, P). Itacambira, estrada para a torre, sentido Juramento, 17°41'05''S, 43°18'37'', 1,321 m a.s.l., 28.X.2009, fr., *D. Cardoso et al. 2750* (ALCB, HUEFS); Chapada de Itacambira, morro da Torre, c. 1.8 km de Itacambira, 17°04'48''S, 43°18'39''W, 1,372 m a.s.l., 15.II.2003, *F. França et al. 4440* (HUEFS); 5 km a leste da cidade, na estrada para Montes Claros, 29.XI.1984, fl., *M.L. Kawasaki et al. CFCR6624* (K, P); 2 km W da cidade, na rodovia para Juramento, no alto da serra, 17°04'S, 43°18'W, 1,220 m a.s.l., 14.II.1988, fr., *J.P. Pirani et al. 2267* (K, NY); estrada Juramento - Itacambira, no alto da Serra de Itacambira, à direita, 1,250 m a.s.l., 30.IX.1997, fr., *R. de Mello-Silva et al. 1483* (BHCB, K, NY); Morro da Torre, 17°04'50''S, 43°18'36''W, 1,334 m a.s.l., 8.I.2016, *A. Queiroz-Lima et al. 173* (ALCB, BHCB, CEPEC, DIAM, HUEFS, K, MBM, MO, NY, P, RB, SPF); Serra Resplandescente, no caminho para

a torre de Itacambira, 17°04'05''S, 43°18'02''W, 1,304 m a.s.l., 30.X.2009, fr., *P.L. Viana et al. 4416* (ALCB, HUEFS).

Sauvagesia spicata occurs in the *campos rupestres* at the municipalities of Botumirim, Grão Mogol, and Itacambira, northeastern state of Minas Gerais, Brazil. The species grows on mountain slopes on rocky sandstones outcrops between 900–1,300 m a.s.l. Flowering was observed from July to August, while the fruiting specimens were collected from September to October.

24. *Sauvagesia vellozii* (Vell. *ex* A.St.-Hil.) Sastre, Sellowia 23: 20. 1971. Fig. 2h

Shrub up to 1 m tall, branches erect, ericoid, the leaves clustered at branch apices and caducous at the base. Flowers pendent with white petals opening widely and usually reflexed, and the fused internal staminodes reddish-pink, becoming white in the apex. *Sauvagesia vellozii* is usually confounded with the Amazonian species *S. longifolia*. Both species grow as herbs or shrubs and have white petals and membranaceous, vinaceous leaves that are similar in size and shape. However, *S. vellozii* differs by the paniculate inflorescence and the absence of free, external staminodes, whereas *S. longifolia* bears flowers on racemes and with the staminodal whorls that are typical of subsect. *Sauvagesia*.

Representative specimens examined: BAHIA: Miguel Calmon, Parque Estadual de Sete Passagens, saída da Mata do Capão Grande, 11°21'57''S, 40°31'13''W, 12.III.2006, fl. and fr., *J.G. Freitas et al. 81* (HUEFS). Mucugê, Morro do Castelo, Vale do Pati, 7.V.2011, fl. and fr., *C.N. Gonçalves & F.W. Mesquita* (HUEFS no. 195489). MINAS GERAIS: Barão de Cocais, Gongo Soco, 1863, fr., *C. Bunbury* (BR no. 5854165). Caeté, Serra da Piedade, área da capela de São Cristóvão, 8.I.2014, fl. and fr., *C.A. Ferreira Júnior et al. 1338* (HUEFS). Catas Altas, Serra do Caraça, 1816, fl. and fr., *A. Saint-Hilaire* (P no. 542218); II.1817, fl., *A. Saint-Hilaire B1241bis* (P); Itamarandiba, Serra Negra, fr., *A. Saint-Hilaire* (P no. 542219); fr., *A. Saint-Hilaire* (P no. 542220). Lima Duarte, Parque Estadual da Serra do Ibitipoca, próximo do Rio do Salto, 1,200 m a.s.l., 9.III.2004, fl. and fr., *R.C. Forzza et al. 3025* (K, RB). Ouro Preto, Vila Rica, II.1817, fr., *A. Saint-Hilaire D84* (P); Pocinho, 25.III.2019, fl., *L.G. Pedrosa 1485* (OUPR). São Tomé das Letras, Pico do Gavião, contraforte sudoeste, 21°37'S, 44°55'W, 1,360 m a.s.l., 22.II.1999, fl. and fr., *E.M. Nic Lughadha & Mello-Silva 213* (NY). Serra do Cipó (Serra da Lapa), 1816, fl., *A. Saint-Hilaire B22176 bis* (P).

Sauvagesia vellozii is relatively well distributed in the understory of wet tropical forests of the Atlantic domain, from the state of Bahia to Santa Catarina at altitudes ranging from 500–1,700 m a.s.l. Flowering and fruiting specimens were collected from October to June.

Acknowledgments

The authors are grateful to Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001, for granting the M.Sc. scholarship to AQL; Cássia Bitencourt, Moabe Fernandes, Pedro Lage Viana, Roberto Salas, and Quézia Cavalcante, for the great company during fieldwork; the curators of all cited herbaria, especially BHCB, HUEFS, P, and RB, for the *Sauvagesia* loans; Alessandro Rapini, Pedro Fiaschi, and one anonymous reviewers, for their critical suggestions and detailed corrections on the manuscript; Charles Zartman, for reviewing the English. We also thank the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), for awarding Research Productivity Fellowships to AMA (grant # 312404/2018-2) and DBOSC (grant # 314187/2021-9).

Data availability statement

In accordance with Open Science communication practices, the authors inform that all data are available within the manuscript.

References

Alcantara S, Ree RH & Mello-Silva R (2018) Accelerated diversification and functional trait evolution in Velloziaceae reveal new insights into the origins of the campos rupestres exceptional floristic richness. Annals of Botany 122: 165-180.

Amaral MCE (1991) Phylogenetische systematik der Ochnaceae. Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie 113: 105-196.

Amaral MCE & Bittrich V (2014) Ochnaceae. *In*: Kubitzki K (ed.) The families and genera of vascular plants. Vol. 11. Springer-Verlag, Berlin, Heidelberg. Pp. 253-268.

Baillon H (1873) Violacées. *In*: Baillon H (ed.) Histoire des plantes. Vol. 4. Ed. Hachette, Paris. Pp. 333-372.

Bartling FC (1830) Classis XLVII Guttiferae. *In*: Bartling FC (ed.) Ordines Naturales Plantarum eorumque characteres et affinitates adjecta generum enumeratione. Ed. Sumptibus Dieterichianis, Göttingen. Pp. 288-295.

Bitencourt C & Rapini A (2013) Centres of endemism in the Espinhaço Range: identifying cradles and museums of Asclepiadoideae (Apocynaceae). Systematics and Biodiversity 11: 525-536.

Cardoso DBOS (2011) A new species of *Sauvagesia* (Ochnaceae) from the Espinhaço Range of Minas Gerais. Brittonia 63: 150-155.

Cardoso DBOS & Conceição AA (2008) A new acicular-leaved species of *Sauvagesia* (Ochnaceae) from Chapada Diamantina, Bahia, Brazil. Brittonia 60: 305-309.

Cardoso DBOS, Sousa HCF & Queiroz-Lima A (2020) *Sauvagesia In*: Flora do Brasil 2020 (continuously updated). Jardim Botânico do Rio de Janeiro. Avaliable at <https://floradobrasil2020.jbrj.gov.br/FB19940>. Access on 25 August 2022.

Cardoso DBOS & Harley RM (2015) *Sauvagesia paganuccii* (Ochnaceae), a new species endemic to campo rupestre vegetation of Bahia, Brazil. Systematic Botany 40: 776-781.

Conceição AA, Rapini A, Carmo FF, Brito JC, Silva GA, Neves PS & Jacobi CM (2016) Rupestrian Grassland vegetation, diversity, and origin. *In*: Fernandes GW (ed.) Ecology and conservation of mountaintop grasslands in Brazil. Springer International Publishing, Switzerland. Pp. 105-127.

Eichler AW (1871) Sauvagesiaceae. *In*: Martius CFP & Eichler HG (eds.) *Flora brasiliensis*. Fleischer, Monachii. Vol. 13, pars 1, pp. 388-419, t.81-85.

Endlicher S (1839) Ordo CXCI. Sauvagesieae. *In*: Endlicher S (ed.) Genera plantarum secundum ordines naturales disposita. Vindobonae 1: 912-913.

Engler A (1874) Ueber Begrenzung und systematische stellung der natürlichen familie der Ochnaceae. Nova Acta Academiae Caesareae Leopoldino-Carolinae Germanicae Naturae Curiosorum 32: 3-28.

Gilg E (1895) Ochnaceae. *In*: Engler A & Prantl K (eds.) Natürlichen Pflanzenfamilien. Vol. 3. Wilhelm Engelmann, Leipzig. Pp. 131-153.

Gingins FC (1824) Violarieae. *In*: Candolle AP (ed.) Prodromus Systematis Naturalis Regni Vegetabilis. Pars 1. Treuttel et Würtz, Paris. Pp. 287-316.

Giulietti AM, Pirani JR & Harley RM (1997) Espinhaço Range region. *In*: Davis SD, Heywood VH, MacBryde OH, Villa-Lobos J & Hamilton AC (eds.) Centres of plant diversity. A guide and strategy for their conservation. Vol. 3. Ed. The Americans, Cambridge. Pp. 397-404.

Giulietti AM, Menezes NL, Pirani JR, Meguro M & Wanderley MGL (1987) Flora da Serra do Cipó, Minas Gerais: caracterização e lista das espécies. Boletim de Botânica. Universidade de São Paulo 9: 1-151.

Grisebach AHR (1864) XXXVIII Sauvagesieae. *In*: Grisebach AHR (ed.) Flora of the British West Indian Islands. Lovell Reeve & Co., London. 112p.

Harley RM (1995) Introduction. *In*: Stannard BJ (ed.) Flora of the Pico das Almas. Royal Botanic Gardens, Kew, London. Pp. 1-42.

Harley RM, Giulietti AM & Leite KRB (2005) Two new species and a new record of *Sauvagesia* (Ochanceae) in the Chapada Diamantina of Bahia, Brazil. Kew Bulletin 60: 571-580.

Harris JG & Harris MW (1994) Leaves. *In*: Harris JG & Harris MW (eds.) Plant identification terminology: an illustrated glossary. Spring Lake Publishing, Utah. Pp. 148-157.

Kanis A (1968) A revision of the Ochnaceae of the Indo-Pacific area. Blumea 16: 1-82.

Linnaeus C (1753) *Sauvagesia*. *In*: Linnaeus C (ed.) Species plantarum. Ed. Laurentius Salvius, Stockholm. 203p.

Martius C & Zuccharini JG (1824) *Lavradia* and *Sauvagesia*. *In*: Martius C & Zuccharini JG (eds.) Nova genera et species plantarum quas in itinere. Vol. 1. Ed. Typis Lindaueri, Monachii. Pp. 31-38.

Myers N, Mittermeier RA, Mittermeier CG, Fonseca GAB & Kent J (2000) Biodiversity hotspots for conservation priorities. Nature 403: 853-858.

Mori SA (2011) From the Field. *In*: Mori SA, Berkov A, Gracie CA & Hecklau EF (eds.) Tropical plant collecting: from the field to the internet. Ed. TECC, Florianópolis. 352p.

Planchon JE (1847) Sur le genre *Godoya* et ses analogues, avec des observations sur imites des Ochnacées, et une revue des genres et espèces de ce groupe. *In*: Hooker WJ (ed.) The London Journal of Botany. Vol. 6. Hippolyte Baillière, London. 36p.

Queiroz-Lima A, Amorim AM & Cardoso DBOS (2017a) A new bristle-leaved species of *Sauvagesia* (Ochnaceae) endemic to the Espinhaço Range, Brazil. Systematic Botany 42: 346-350.

Queiroz-Lima A, Amorim AM & Cardoso DBOS (2017b) A new species of *Sauvagesia* (Ochnaceae) from the northern Espinhaço Range, Brazil, and an emended description of *Sauvagesia paganuccii*. Phytotaxa 316: 59-66.

Queiroz-Lima A, Amorim AM & Cardoso DBOS (2018) Two more elegant species of the neglected *Sauvagesia elegantissima* complex (Ochnaceae). Systematic Botany 43: 221-230.

Radford AE, Dickison WC, Massey JR & Bell CR (1976) Vascular plant systematics. Available at <http://www.ibiblio.org/botnet/glossary/>. Access on 30 August 2022.

Rapini A, Ribeiro PL, Lambert S & Pirani JR (2008) A flora dos campos rupestres da Cadeia do Espinhaço. Megadiversidade 4: 16-21.

Rapini A, Bitencourt C, Luebert F & Cardoso D (2021) An escape-to-radiate model for explaining the high plant diversity and endemism in campos rupestres. Biological Journal of the Linnean Society 133: 481-498.

Ribeiro PL, Rapini A, Silva UCS, Konno TUP, Damascena LS & Berg C (2012) Spatial analyses of the phylogenetic diversity of *Minaria* (Apocynaceae): Assessing priority areas for conservation in the Espinhaço Range, Brazil. Systematics and Biodiversity 10: 317-331.

Rizzini CT (1977) Sistematização terminológica da folha. Rodriguésia 29: 103-125.

Saint-Hilaire A (1822) Aperçu d'un voyage dans l'intérieur du Brésil, La province Cisplatine et les Missions dites du Paraguay. *In*: Saint-Hilaire A (ed.) Mémoires du Museum d'Histoire Naturelle. Vol. 9. Impreimeur Libraire, Paris. Pp. 307-336.

Saint-Hilaire A (1823) Description abrégée des espèces qui font partie de la monographie des genres *Sauvagesia* et *Lavradia*. *In*: Saint-Hilaire A de (ed.) Bulletin des sciences par la Société philomathique de Paris. De L'imprimerie de Plassan, Paris. Pp. 172-175.

Saint-Hilaire A (1824a) Monographie des genres *Sauvagesia* et *Lavradia*. *In*: Saint-Hilaire A (ed.) Mémoires du Museum d'Histoire Naturelle. Vol. 11. De L'imprimerie de Plassan, Paris. Pp. 11-68; 97-116.

Saint-Hilaire A (1824b) Monographie des genres *Sauvagesia* et *Lavradia. In*: Saint-Hilaire A (ed.) Histoire des plantes les plus remarquables du Brésil et du Paraguay. De L'imprimerie de Plassan, Paris. Pp. 1-79, tab I-VIII / Pp. 325-339, tab. XXIX-XXX.

Saint-Hilaire A (1829) XXXIV. Frankeniaceae. *In*: Saint-Hilaire A (ed.) Flora Brasiliae Meridionalis. Vol. II. Belin Bibliopolam, Parisiis. Pp. 151-156.

Sastre C (1968) Recherches sur les Ochnacées, I *Sauvagesia sprengelii* Saint-Hilaire et les espèces affines. Adansonia 8: 113-129.

Sastre C (1970) Recherches sur les Ochnacées, II. Les espèces de *Sauvagesia* L. à placentation basale. Caldasia 10: 497-516.

Sastre C (1971a) Recherche sur les Ochnacées-V - Essai taxonomie numérique et schéma évolutif du genre *Sauvagesia* L. Sellowia 23: 9-44.

Sastre C (1971b) *Sauvagesia erecta* L., ses variations. Espèces affines. Caldasia 11: 3-66.

Sastre C (1973) Monographie du genre *Sauvagesia*: son évolution. Ph.D. Thesis. Université de Paris, Paris. 145p.

Sastre C (1978) Description de deux taxons nouveaux de *Sauvagesia* L. (Ochancées) récoltés en Colombie amazonienne. Bulletin du Muséum National d'Histoire Naturelle. Botanique 521, Sér. 3: 35-38.

Sastre C (1981) Ochnacées nouvelles du Brésil. Bulletin du Jardin Botanique National de Belgique 51: 397-413.

Sastre C (1987) Studies on the flora of the Guianas: 30. Considéracions phytogéografiques sur les Ochnacées Guyanaises. Compte Rendu Sommaire des Séances de la Société de Biogéographie 63: 89-97.

Schneider JV, Bissiengou P, Amaral MCE, Tahir A, Fay MF, Thines M, Sosef MSM, Zizka G & Chatrou LW (2014) Phylogenetics, ancestral state reconstruction, and a new infrafamilial classification of the pantropical Ochnaceae (Medusagynaceae, Ochanceae *s. str.*, Quiinaceae) based on five DNA regions. Molecular Phylogenetics and Evolution 78: 199-214.

Schneider JV, Jungcurt T, Cardoso D, Amorim AM, Töpel M, Andermann T, Poncy O, Berberich TC & Zizka G (2021a) Phylogenomics of the tropical plant family Ochnaceae using targeted enrichment of nuclear genes and 250+ taxa. Taxon 70: 48-71.

Schneider JV, Paule J, Jungcurt T, Cardoso D, Amorim AM, Berberich T & Zizka G (2021b) Resolving recalcitrant clades in the Pantropical Ochnaceae: insights from comparative phylogenomics of plastome and nuclear genomic data derived from targeted sequencing. Frontiers in Plant Science 12: 638650.

Silveira FAO, Negreiros D, Barbosa NPU, Buisson E, Carmo FF, Carstensen DW, Conceição AA, Cornelissen TG, Echternacht L, Fernandes GW, Garcia QS, Guerra TJ, Jacobi CM, Lemos-Filho JP, Stradic SL, Morellato LPC, Neves FS, Oliveira RS, Schaefer CE, Viana PL & Lambers H (2015) Ecology and evolution of plant diversity in the endangered campo rupestre: a neglected conservation priority. Plant Soil 403: 129-152.

Stearn WT (1992) Botanical Latin. 4th ed. David and Charles, Newton Abbot, Devon. 546p.

Thiers B (continuously updated) Index Herbariorum: a global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. Available at <http://sweetgum.nybg.org/science/ih/>. Access on 30 August 2022.

van Tieghem P (1904) Sur les Luxembourgiacées. Annaes de Sciencias Naturaes III 19: 1-96.

Vasconcelos TNC, Alcantara S, Andrino CO, Forest F, Reginato M, Simon MF & Pirani JR (2020) Fast diversification through a mosaic of evolutionary histories characterizes the endemic flora of ancient Neotropical mountains. Proceedings of the Royal Society of London Series B, Biological Sciences 287: 20192933.

Weberling F (1992) Morphology of flowers and inflorescences. Cambridge University Press, London. 423p.

Zappi DC & Lucas E (2002) *Sauvagesia nitida* Zappi & E. Lucas (Ochnaceae) - a new species from Catolés, Bahia. NE Brazil, and notes on *Sauvagesia* in Bahia & Minas Gerais. Kew Bulletin 57: 711-717.

Area Editor: Dr. Marcelo Trovó
Received on September 11, 2022. Accepted on March 23, 2023.